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Disease Threatens Sugar Beet Industry

Yellows Virus Lowers Sugar Content, Yield

WASHINGTON—Decreasing sugar content and yield of sugar beets grown in four western states, source of almost half the country's beet sugar, must be remedied if the industry is to remain competitive, according to U.S. Department of Agriculture scientists.

Dr. Carlyle W. Bennett of the Agricultural Research Service cautions that California's beet industry is threatened if decreasing sugar content and yields, acute in some areas, become more widespread. This threat also faces the industry in Washington, Oregon, and Idaho.

The major factor, which has become more important in recent years, is the spread of virus yellows disease. Occurrence of this disease, which lowers both sugar content and total yield, depends on an aphid which transmits the virus. Infection in some stages of growth may reduce beet yields as much as 35%.

Although this disease was first found in Michigan less than 10 years ago, it is now of importance largely in the four-state region of the West where weather conditions are most favorable for its spread. Losses in the western areas have been largely masked by increased tonnages brought about by heavy applications of fertilizers, but scientists believe that acre yields would have been higher except for the effect of disease.

At one time it was believed that yellowing was a normal ripening process of the sugar beets, but recent study has shown yellowing is caused by a virus. Growers have often turned to increased use of nitrogen to combat the yellowing effect. Although nitrogen may mask the yellowing, the beets are still damaged by the disease.

Although there is no satisfactory control for yellows at present, possibilities of reducing damage include: (1) selecting planting dates to avoid infection; (2) destroying wild and

(Turn to SUGAR BEET, page 5)

Court Asked to Halt Further DDT Spray Programs

NEW YORK—The U.S. Court of Appeals here recently heard a complaint from thirteen residents of Long Island who objected to aerial spraying of insecticides on their lands for control of insect pests. The group termed such activities as an "unwarranted invasion."

The complaining residents, dissatisfied at the ruling handed down last June by Judge Walter Bruchhausen of the U.S. District Court, demanded that the government call a halt to its spray program. Judge Bruchhausen had found that the spraying to exterminate an infestation of gypsy moths from the area was a "valid exercise of the state's police power" despite the protests from the group.

In 1957, the U.S. Department of Agriculture, in cooperation with the New York State agriculture department, sprayed about 600,000 acres of land in Nassau and Suffolk counties of Long Island, which started the irate reactions from a few residents of the area.

The program was successful enough, according to a government spokesman at the recent hearing, that further spraying is not likely to be necessary. At the same time, he defended the government's right to resume the operation if conditions warrant.

No decision was handed down in the recent hearing, presided over by three judges.

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Mixed Weather Prompts Varied Crop Predictions

WASHINGTON—Mixed-up weather situations made the nation's crop picture as of May 1, 1959, a multicolored jumble of bright prospects and not-so-bright predictions, the U.S. Department of Agriculture's General Crop Report indicated.

According to the report, which was compiled by the Crop Reporting Board, rains early in April were frequent enough in the mid-South and much of the Southeast to hamper planting progress and later cool weather slowed germination and growth, with stands sometimes irregular and considerable replanting necessary in some localities.

A period of open weather in late April spurred activity and progress is now well ahead of last year's extremely backward planting season, the report said.

Lighter rains over the middle Mississippi and lower Ohio River Valleys allowed field work to progress rapidly, and moisture is now needed in numerous areas to stimulate growth. A few fields of corn were planted as far north as southern Illinois and Indiana, and planting was nearing completion in extreme southern areas.

Cotton planting was nearing completion in the far southwest and southern parts of the eastern belt, and starting a little earlier than usual on the High Plains of Texas.

Sorghum planting, the report continued, was about one-third finished in Texas and land preparation well advanced to the north.

Soybean planting has been rapid in Arkansas, but limited in the Southeast where much of the crop follows small grains.

Tobacco was nearly all transplanted in southern parts of the growing area, but beds in Kentucky showed slow irregular growth, with some being watered and some re-seeded.

Sugar beets in California's Imperial Valley were being harvested with good yields and sugar content, and planting generally was well advanced in the northern and mountain states.

Maple syrup production was about a fifth below last year. Sap runs were generally short in the major producing areas as temperatures were too cool at the beginning and too warm at the close of the season.

The report went on to say that winter wheat prospects declined about 1% during April as lowered outlook in the northeast and northern interior

(Turn to WEATHER, page 6)

Potash Deliveries Drop 3% During First Quarter

WASHINGTON—The eight principal American potash producers delivered 898,743 tons of salts containing an equivalent of 523,540 tons of K_2O during the first three months of 1959, reported the American Potash Institute.

This was a decrease of 3% in salts and 4% in K_2O under the similar period in 1958.

Continental U.S. took 495,484 tons K_2O; Canada, 21,433 tons; Cuba, 494 tons; Puerto Rico, 1,500 tons, and Hawaii, 4,629 tons.

Exports to other countries were 59,438 tons K_2O or 18% more than year-ago figures.

Simplot to Operate Idaho Phosphate Mine

POCATELLO, IDAHO—The J. R. Simplot Co. here has signed an agreement to manage and operate the Anaconda phosphate mines and beneficiating plants at Conda, Idaho.

Products from the mine, which lies north of Soda Springs, Idaho, and has been in operation since 1920, will be shipped to the Anaconda Co. at Anaconda, Mont. and to the Simplot plant, west of Pocatello. They also will be sent to other users.

W. Grant Kilbourne, vice president and general manager of the minerals and chemical division of the J. R. Simplot Co., said there will be a substantial increase in employment at Conda, which is an open pit mine.

He said the change in operation "should result in doubling the size and scope of the operation, which mined 200,000 tons last year."

Simplot is in process of expanding output of triple superphosphate, including construction of a sulphuric acid plant at its operations here.

Pesticide Export Value is $82 Million

WASHINGTON — The value of pesticides exported from the U.S. to as many as 85 countries in 1958 amounted to a total of $82,067,000, according to information compiled by Harold H. Shepard and Charlotte A. Graham, Commodity Stabilization Service, U.S. Department of Agriculture and just published by the National Agricultural Chemicals Assn. The 1958 export figure was slightly under the $86,002,000 total of 1957, but higher than the 1956 export total.

Here is a summary of the tabulation furnished by USDA:

Material	No. of countries	Value
DDT technical	48	$ 4,944,781
DDT formulations (containing 20-74%)	42	1,713,060
DDT formulations (containing 75% or more)	51	11,980,503
Benzene hexachloride	27	1,472,471
2,4-D and 2,4,5-T	47	2,896,001
Herbicides (not elsewhere classified)	56	5,854,514
Agricultural sulfur (not elsewhere classified)	25	253,298
Organic phosphorus insecticides	66	4,163,085
"Polychlor" insecticides	82	17,477,853
Agricultural insecticides (not elsewhere classified)	73	10,147,791
Fungicides	66	7,437,344
Fumigants	49	1,066,928
Household and industrial pesticides	85	4,958,217
Disinfectants	65	2,986,702

Companion Bill to Cooley Amendment Introduced in Senate; Hearing Date Set

WASHINGTON — A Senate bill, SB.-1900, similar in content to the proposed Cooley amendment, HR. 6436 (page 1, May 4, Croplife) to include nematocides, defoliants desiccants and plant regulators under the provisions of the Federal Insecticide, Fungicide and Rodenticide Act of 1947, was introduced in the Senate on May 11 by Spessard L. Holland (D., Fla.) and George D. Aiken (R., Vt.).

The Senate bill, like the House bill, would expand the present definition of the term "economic poison" to include these additional materials, amend other definitions in the Act, and add new ones as necessary under the broader coverage of the Act. Neither amendment changes the provisions relating to presently-regulated products, however.

A hearing by the House Committee on Agriculture will be conducted on May 21 to hear testimony concerning HR. 6436, the Cooley amendment. The hearing, which will be open to the public, is scheduled for 10 a.m. Thursday, May 21 in room 1310 in the new House office building.

At press time, the names of those to testify had not been made public, but witnesses were said to represent the U.S. Department of Agriculture, the Department of Health, Education and Welfare, farm organizations and the pesticide industry. Lea S. Hitchner, executive secretary of the National Agricultural Chemicals Assn., will represent that group.

Research Foundation Shifts Regional Experiment Plant

RENNER, TEXAS—The Texas Research Foundation is shifting its regional agricultural experiment program at Merkel to full-scale field projects, according to an announcement by Dr. C. L. Lundell, director of the foundation.

Dr. Lundell says this will greatly shorten the time lag between laboratory research and field production on a commercial scale.

Field work in Nolan, Haskell, Jones, Taylor, Stephens, Shackelford and Callahan will consist of two phases. One will include rangeland improvement and the other field crops which will be grown over the fertilized residue of preceding crops.

"We shall check the value of the fertilizer in the decomposition of stubble and in the improvement of the organic matter content of the soil," he said. "Then we shall compare the yield of the crop following the application to the yield of the same crop on unfertilized land."

Another objective is to determine the benefits of fertilizer on established grasses and forages. The foundation hopes to introduce new crops not generally grown in the area.

Idaho Fertilizer, Spreader Service Firm Started

NAMPA, IDAHO—The Lewis Yoder Co., Inc., and Kellogg Mills of this city have announced the inauguration of a new service for area farmers.

The two firms have formed the Farmers Fertilizer Service, which will deal in the sale and spreading of bulk fertilizers. A new truck has been purchased which can be used for transporting unsacked fertilizer to the fields and then distributing it.

The bulk fertilizer will also be sold to farmers who wish to haul it in their own trucks.

Important Information Gathered During 15 Years of Weed Control Tests in Oklahoma

STILLWATER, OKLA. — A few years ago a manufacturer of brush-killing chemicals thought that a generous portion of onion juice might give his products more "bit."

For a test of the mixtures under field conditions, he turned to Harry M. Elwell, a veteran of 23 years of research in brush control methods for Oklahoma. Mr. Elwell is an agronomist at Oklahoma State University under joint appointment by the Oklahoma agricultural experiment station and the U.S. Department of Agriculture.

During the past 15 years many of the 80 manufacturers of brush-killing chemicals in the U.S. have been sending samples to Mr. Elwell for testing. During a single year he has applied as many as 35 different chemicals, using various rates, dates and methods of application, on 500 test plots. His records of results fill many field data books, and are the basis of recommendations which he issues for use by landowners.

He has tested many selective herbicides, which kill broadleafed woody plants without harming grass or sterilizing the soil. He started with "Ammate" in 1944, when he was on the staff of the Red Plains conservation experiment station near Guthrie. Ammate had been developed for purposes of camouflage during World War II, but had been found to have good possibilities for use as an herbicide.

(For the record—onion juice didn't seem to improve the brush-killers. Neither did kitchen detergent, nor common vinegar.)

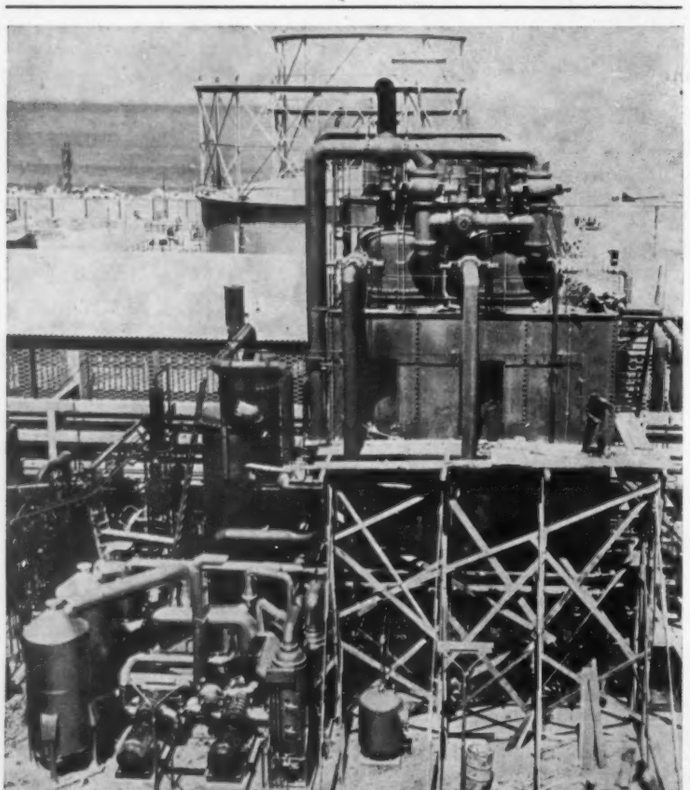
Currently, he is testing trichlorobenzoiac acid or 2,3,6-TBA, compounds of urea, 2,4,5-T, butyric phenoxyls, and derivatives of some of the older selective herbicides. Using airplane sprayers and ground equipment, he has applied these on three 160-acre tracts of typical central Oklahoma brush land near Lake Carl Blackwell. He also has test plots on hawthorn brush land near Boynton, Muskogee County; persimmon brush in northwest Creek County near Oilton; green briar in southwest Payne County near Coyle; salt cedar brush near the Cimarron River in Payne County; and on land near Valiant in McCurtain County that is infested with forestiera.

The "invert emulsions" are a new development in application of herbicides which Mr. Elwell considers quite promising. The selective herbicide is carried in an emulsion that can be applied with special airplane equipment. The blobs of emulsion can be applied more accurately than liquid spray, and possibly the brushy plants absorb more of the herbicide, he says.

At least 15 airplane and helicopter spray service companies, and an uncounted number of sellers or operators of ground equipment, do brush control work in Oklahoma. Some men have spent considerable time and money in developing new types of equipment and placing it on the market. During 1954-58, the number of Oklahoma acres sprayed for brush control increased ten-fold to 108,000 acres. This total included 10,000 acres in Osage County.

Mr. Elwell does not think that all of the estimated 4,500,000 acres of brushy land in Oklahoma will be cleared in the foreseeable future—nor should be. Some of that land is so shallow and infertile that it could produce little more grass than at present, and might well be left for wild life and such grazing as it does provide. Some Oklahoma land would grow commercial timber if the brush were removed so valuable species would have full opportunity to grow, and this is the main reason for the present tests in McCurtain County.

Most brush control work in Oklahoma is being done for the purpose of increasing grass production. When a rancher can increase growth of grass from 500 lb. an acre to 2,000 lb., as has been done in many tests, he is going to produce grass more efficiently. Mr. Elwell considers his brush control research as a guide to more efficient production, a means of keeping brush from encroaching on present crop land acreage, and a safeguard for the future when additional crop acres may be needed.



PERU AMMONIA PLANT—View of the nearly-completed $10 million synthetic ammonia plant at Callao, Peru, which is expected to be on stream soon with anhydrous ammonia, nitric acid, ammonium nitrate and ammonium sulfate. The plant was designed and built by Montecatini of Italy and uses a Fauser-Montecatini process. Operations will be in charge of Fertisa-Fertilizantes Sinteticos S.A., with headquarters in Lima, Peru. Unusual feature of ammonium nitrate manufacture is granulating device based on revolving discs, said to be the first used for this purpose in the Western Hemisphere. Capacity, based on a 330-day year, is 20,000 metric tons anhydrous ammonia; 54,000 metric tons nitric acid, 53% by weight; 35,000 metric tons ammonium nitrate; 7,500 metric tons ammonium sulfate; and 1,500 metric tons nitric acid, 98% by weight.

C. T. Harding Named Executive Vice President At V-C Chemical Corp.

RICHMOND, VA. — Virginia-Carolina Chemical Corp. named Charles T. Harding, once foreman at one of its fertilizer plants, as executive vice president.

Mr. Harding, who was recently made vice president of the corporation (Croplife, April 13, page 23), will be in charge of all operations for V-C at its headquarters here. He ranks second in the corporate structure—behind Justin Potter, president and board chairman. Mr. Potter lives in Nashville.

Mr. Harding's appointment was announced at a meeting of the directors, who also took these steps: (1) Deferred for the third consecutive quarter the usual $1.50 a share dividend on V-C's cumulative 6% preferred stock and (2) approved a new fertilizer plant at Jasonville, Ind. The plant will be V-C's thirty-third fertilizer operation.

John J. Redmon

APPOINTMENT ANNOUNCED — John J. Redmon has been named regional sales manager for Southwestern Steel Container Co., Dallas, Texas, according to an announcement by Gordon D. Zuck, president. Mr. Redmon is a native of Texas, attended Southeastern State College and the University of Colorado Law School. Since that time he has acquired a wide acquaintance in the container field. He will operate out of Dallas. The firm makes a complete line of steel pails.

California Sets Hearings On Insecticide Question

SACRAMENTO, CAL.—The State Department of Agriculture has announced public hearings will be held at 10:30 a.m. in the Mirror Building, 145 South Spring Street, Los Angeles, on May 20, and at 10 a.m. in the Agriculture Building, 1220 "N" Street, Sacramento, on May 22, to consider removing the organic phosphorus insecticide Guthion from the department's classification of "Injurious Materials."

Regulations of the department classify three arsenicals used in dust form, and eleven organic phosphorus compounds as "Injurious Materials." These pest control chemicals can be used only under a permit from a county agricultural commissioner, and the user must sign a statement showing the permit number before a dealer may deliver such materials to him. The regulations also describe in detail the conditions and precautions that must be followed in using the materials.

The manufacturer of Guthion has petitioned the department to hold the hearings to give the firm opportunity to present information to substantiate its request that Guthion be removed from the list of pest control materials subject to special restrictions.

The hearings will be conducted by Robert Z. Rollins, chief of the department's Bureau of Chemistry. Any interested persons may attend and present evidence or testimony relevant to the proposed amendments of the regulations.

PUBLICATIONS AVAILABLE

BERKELEY, CAL.—New publications of interest to the agricultural chemicals industry have been prepared for release to interested persons, by the University of California. Titles as announced by the division of agricultural sciences include: 1959 Pest Control Program for Alfalfa Seed, leaflet 86; Flyscreening, by Samuel A. Hart, Stanley Coates, and Peter J. Lert, leaflet 107; and Microbial Insecticides, which describes "a major breakthrough in crop pest control . . . by the insecticide industry on the basis of research conducted during the past decade by the laboratory of insect pathology" in the department of biological control of the university.

Tests to Determine Economics of Nematode Control Underway in Texas

MIDLAND, TEXAS—A test to determine if nematodes can be controlled economically is now under way on the R. V. Robinson and Hubert Belton farms. Nematodes were apparently unknown in this area a few years ago, but are now numerous enough to damage cotton severely.

The cotton fields will be treated by boring holes through which ethylene dibromide will be shot. The areas comprise only a small acreage.

The tests are being conducted by the Wood Chemical Co. of Lubbock in cooperation with the farmers and the Texas extension service.

USDA Issues Milk Plant Insect Control Report

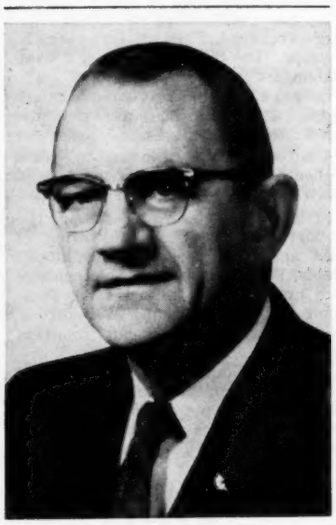
WASHINGTON — Suggested procedures for prevention of insect infestation in dry milk processing plants are given in a report issued by the U.S. Department of Agriculture.

Processors should learn to recognize the major insect pests, inspect their plants frequently for traces of these insects and spray with an effective material during the warmer seasons, the report states.

A free copy of the report, "Insect Prevention and Control in Plants Processing Dry Milk," AMS-302, may be obtained from the Marketing Research Division, Agricultural Marketing Service, U.S. Department of Agriculture, Washington 25, D.C.

AVAILABLE BULLETIN

BERKELEY, CAL. — A new free bulletin has been issued by the University of California on the subject of plant analysis, a scientific tool to guide fertilization practices. In its first part, the bulletin describes plant analysis and tells how to use it to determine the fertilization needs of sugar beets under commercial field conditions. The second part of the 78-page bulletin describes the analytical methods of plant analysis for many crops as they are used in University of California laboratories. U.C. Bulletin 766 entitled "Plant Analysis and Analytical Methods" is available at agricultural extension service offices or from the University of California, Agricultural Publications, 22 Giannini Hall, Berkeley 4, Cal.



Harry R. Colvin

APPOINTMENT of Harry R. Colvin to the position of director of field sales for the Gandy Co., Owatonna, Minn., was announced by E. S. Gandrud, president. In his new position, Mr. Colvin will assist in the formation and growth of the Gandy sales organization and the promotion of the Gandy line of commercial fertilizer applicators and granular chemical applicating equipment.

Fertilizer Co-op

SUNNYSIDE, WASH.—A nonprofit agricultural landowners' cooperative called the Mid-Roza Assn. Co-op, has been formed, according to incorporation papers filed in the Yakima County auditor's office.

The papers say the local organization will deal in fertilizing material and farmers' supplies.

TO COLLECT BOMBYLIIDAE

MANHATTAN, KANSAS—A Kansas State University entomologist has been awarded a grant from the Bache fund of the National Academy of Science to spend six weeks in Mexico in August and September collecting flies of the family Bombyliidae. Reginald H. Painter, grant recipient, has discovered and named about 60 of the 500 known Bombyliidae species on the North American continent, and has published 14 papers on his findings.

MORE BEEF FROM FERTILIZER

AMES, IOWA—Recent experiments in Ringgold County, Iowa, have shown that it's possible to get more feed from bluegrass pastures when fertilized properly, said J. A. Stritzel, Iowa State College agronomist. Bluegrass topdressed with 60 lb. nitrogen in April or late March has increased yields as much as ½ to 1 ton an acre, Mr. Stritzel said. These increases compared to 50 to 100 lb. of beef when translated into steer gains, Mr. Stritzel said. Figuring beef at 25¢ lb. and nitrogen at 15¢ lb., gives returns of $12.50 to $25 from a $9 investment, he said.

Hough Announces Changes In Sales Organization

LIBERTYVILLE, ILL.—G. A. Gilbertson, president of the Frank G. Hough Co., Libertyville, announced the appointment of Herman R. Brown as sales manager, "Payloader" division.

Mr. Brown has been associated with the company for 14 years and was formerly western regional manager.

Meanwhile, Kenneth B. Larkin, formerly a district manager, has been appointed eastern regional manager; Robert L. Knox has been transferred from eastern regional manager to central regional manager; Donald O. Ross becomes western regional manager after being a district manager; Bruce C. Dennett, formerly sales engineer, has been appointed assistant to the regional managers, and Charles J. Bernard, manager of the order and distribution department, will assume direction of manufacturers' export sales as well as scheduling operations.

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INSECT, PLANT DISEASE NOTES

Aphids, Other Bugs in Missouri's Report

COLUMBIA, MO.—Pea aphids are now present in most alfalfa fields, and in some fields in the southern sections of the state aphid numbers are extremely high. The infestation started building up late enough, however, that few fields are showing much discoloration. Some alfalfa in the extreme southern counties is now being cut, and most fields in the heavier infested areas are near cutting.

In the southwestern counties, spotted alfalfa aphids are beginning to increase. If dry weather continues, this increase will undoubtedly continue.

In the southeastern counties, several alfalfa fields are heavily infested with variegated cutworms. These are dirty brown to grayish worms, with yellow spots in the middle of the back.

There are two different kinds of aphids working on small grains—Greenbugs and English grain aphids.

Greenbug numbers are going down, and we are past the point where these will hurt good stands of grain.

English grain aphids are still building up in numbers, and their main injury is yet to come. They feed on the newly forming heads and grain, and if numbers are heavy enough, can cause injury up until about the time the grain is in a hard dough stage.

Several fields of grain in the bootheel counties have been sprayed during the week for armyworm control. Farmers should be on the watch for them in all rank grain in the southern portion of the state.

Bean leaf beetles are working all kinds of beans. In the southeast, soybeans just coming through the ground are being fed on, but there is little evidence that spraying for them at this stage of growth will increase bean yields sufficiently to make it a paying proposition. Garden varieties are being severely injured, also, and should be sprayed.

Early corn in the southwestern counties is being stripped by corn flea beetles. These are very small black beetles which jump as soon as the plant is disturbed.

As they feed, these insects strip the green from the leaves. The plants take on a withered look, but usually recover.

The big injury from corn flea beetles comes from their ability to carry Stewart's disease, a bacterial wilt of corn.

This has been an ideal aphid year. They are literally plastering vegetables and ornamentals. Rose slugs have gotten started in a big way, and Colorado potato beetles are starting on potatoes.

Strawberry Plants Hit By Pests in New Jersey

NEW BRUNSWICK, N.J.—Reports from Burlington-Camden County indicate about ⅓ of early laid eggs of red banded leaf roller were hatched on May 5. Curculio is active, also. Mites are in blocks where no pink applications of miticide were made. Some aphids (green apple and rosy) are present.

Two-spotted mites are very numerous in some South Jersey strawberry plantings. Plants are in flower and gray mold spray should be continued at 7 to 10-day intervals. Strawberry weevils are still causing some damage to untreated fields around Hammonton. Leaf rollers are laying eggs at a moderate rate with a few newly-hatched larvae in evidence.

May 4 adult carrot weevils were observed in overwintered parsley near Vineland. Eggs were numerous but no larvae observed. Fields should be baited with apple pomace baits now.

A field rot is prevalent in many commercial fields in southern parts of the state. Large, (match head) black, irregular-shaped sclerotia are present on the rotting onions. No treatment prevents this type of trouble. The cold wet weather in late March and early April was primary cause for outbreak of this disease. It may not break out as a serious problem for another 5 or 10 years.

Cornborer is quite numerous in Central New Jersey and also in Salem and Cumberland County areas.

Alfalfa Aphid Control Tests Made in New Mexico

UNIVERSITY PARK, N.M.— Researchers at the New Mexico State University Experiment Station are waging an experimental chemical and biological warfare against the spotted alfalfa aphid.

Dr. Stuart R. Race, assistant entomologist with the University's department of botany and entomology, reports that trial applications of some of the old, as well as new, insecticides in heavily infested areas of the state, have given good to excellent control. Meanwhile, wasps which parasitize the aphids are becoming more abundant over the state.

Heavy infestations of the spotted alfalfa aphid have been found in the Hatch Valley, Alamogordo-Tularosa, and Cliff-Gila areas; also in Eddy, Chaves, and San Miguel counties.

For their experimental warfare against the aphid, staff members of the NMSU botany and entomology department selected two heavily infested areas, the Hatch Valley and Tularosa, to test the effectiveness of several standard and experimental insecticides. Experiments were carried out in the Hatch Valley in February and in the Tularosa area in March and April. The insecticides were applied with tractor-mounted boom sprayers at the rate of 10 gallons of mix spray per acre.

Grasshoppers Reported Active in Colorado

FORT COLLINS, COLO.—Entomologists last week began to assemble a picture, showing the size and scope of the 1959 grasshopper control problem in Colorado.

Surveyors in southeastern Colorado reported 25 grasshoppers per square yard in Baca County. In other counties, numbers per square yard ranged from 18 in Prowers County, 10 in Bent and Otero counties, down to one each in Crowley and Pueblo counties.

These reports covered grasshoppers in the nymph stage, now emerging from the first hatch. They are the first to be picked up in the weekly survey by the Colorado insect detection committee headquartered at Colorado State University in Fort Collins. As later reports flow in, the infestation pattern will begin to take shape.

Elsewhere, entomologists reported the appearance of army cutworms in eastern Colorado counties adjacent to the Kansas border. There was an average of one cutworm per three feet of drill row.

Scattered damage by Western wheat mites was reported in Baca and Huerfano counties, and the green bug has been found in isolated spots in Baca County. In Logan County, wheat stem maggots were found in wheatfields—at the rate of one maggot per five plants.

Largest numbers of spotted alfalfa aphid were discovered in Baca County. Entomologists, who swept insect nets over alfalfa fields, picked up 10 to 30 aphids for each 10 sweeps. They netted four per 100 sweeps in Pueblo County. But, thus far, no aphids were found in Prowers, Bent, Otero and Crowley counties.

Alfalfa weevils are pushing their invasion of the Arkansas Valley. An average of 20 larvae turned up for every 10 sweeps in Pueblo County fields, but dropped to a rate of 1 to 10 per 10 sweeps in Otero County. Damage is also being caused in Logan, Sedgwick and Yuma counties.

Pea aphids are ranging over alfalfa fields in Eastern Colorado counties. Ten sweeps of the net turned up the following number of insects: 40 in Baca County, 25 each in Bent and Otero counties, 20 in Logan County and 10 each in Prowers, Crowley and Pueblo counties.

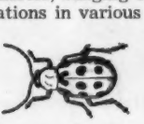
Adult potato psyllids were found on matrimony vine in Otero County. The first taken this season, the psyllids averaged 5 to 8 for each 10 sweeps. The report said eggs were "abundant."

Otero County also is troubled with apple twig borers. They were detected on limbs of ash trees.

In Weld County, the entomologists collected an average of 85 adult seed corn maggots in each bait trap.

Turning to western Colorado, the report showed a low infestation of pea aphids in Mesa County alfalfa fields. But green peach aphid colonies are numerous in the Palisade, Vineland and East Orchard Mesa areas. No increase in lygus bug numbers was found.

In Delta County, brown mites have begun to hatch in some apple orchards. The apple aphid is appearing in large numbers, ranging from 10 to 50% infestations in various orchards.



Curculios, Beetles Infest Georgia Crops

ATHENS, GA.—Light to heavy infestations of billbug in corn in Irwin, Coffee, Atkinson, Pierce, Lowndes, Colquitt and Webster counties.

Emergence of new first-generation plum curculio adults from the soil in peach orchards is expected to start

IOWA COUNTS BORERS

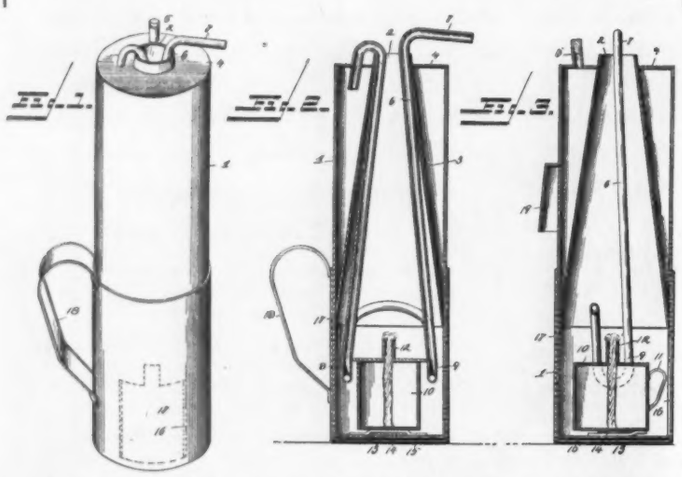
AMES, IOWA—Iowa's spring cornborer population is estimated at an average of 3.049 borers per acre, H. M. Harris, state entomologist has announced. This figure is based on an average of 0.63 live borer per square yard in the state's oats fields, as revealed in the annual spring survey. The survey shows 70.65% of last fall's borers are alive to start the 1959 season. (Most of the surviving borers are those in the oats fields.)

The 1959 count shows less than half as many borers as were found at the same time in 1958. However, Mr. Harris said, if conditions for the next few weeks favor the borers, this number could cause heavy damage.

Among 3,000 live borers per acre in oats it is safe to assume there are 1,500 females. The state will have no more than three times as many acres of corn this year as it has of oats. That would still leave at least a potential of 500 female borers, on the average, that can move into each acre of corn to lay eggs.

Each female lays about 300 eggs—a potential total of 150,000 borer eggs per acre. If the weather is favorable, three-fourths of these would probably hatch. In a field planted with 12,000 stalks per acre there'd be nine borers per stalk—enough to reduce the yield 27%.

Saga of Insect Pest Control



The above illustration of Mr. Hammer's fumigation device is from the original drawings appearing in the patent papers issued to the inventor in 1895.

STEAM appears to have been a favorite means of propelling insecticidal toxicants through the years. Here is a patent issued June 18, 1895 to Willie A. Hammer of Fairlie, Texas wherein insects would be killed through "fumigation or poison-laden steam." It is described in its patent papers as being "a portable hand apparatus which shall be simple, compact and inexpensive in construction and effective in operation."

The contents of the tank or reservoir are heated by the lamp until steam is generated, the patent says. Once generated, the steam will pass upward, downward, then upward again through the pipe (No. 6) and outward through the spout (No. 7) and thus may be directed to the desired spot for destroying the insects.

The illustrations show various perspectives of the "improved insect destroyer." Figure 1 shows it complete, Fig. 2 is a vertical section through the same in line with the spout, and Fig. 3 is a similar view taken at right angles to Fig. 2.

No. 3 indicates an interior tapering or conical partition or wall reaching from a point near the bottom of the casing to the top, and forming a chamber or reservoir for containing "medicated water."

here the last week in May, and even though these may not be ready to deposit eggs before harvest of the earliest varieties of peaches, they feed heavily after emergence and the feeding punctures facilitate the entrance and development of brown rot.

The May beetle is defoliating pecan trees in Spalding and Lamar counties. Some trees completely defoliated.

Moderate to heavy infestations of Mexican bean beetle on beans in Brooks, Thomas, Grady and Mitchell counties. Light infestations of Colorado potato beetle on tomatoes in Thomas and Mitchell counties.

Tobacco budworms are in light to moderate infestations on tobacco in Cook, Lowndes, Brooks, Thomas, Grady and Mitchell counties, and light infestations of aphids are found on tobacco in Brooks, Thomas, Grady and Mitchell counties.

Moderate infestations of grasshoppers on tobacco in Brooks and Thomas counties.

Light infestations of thrips on cotton in Brooks, Thomas, Grady, Mitchell, Terrell and Sumter counties.

Fire Ant Funds to be Allocated in Arkansas

LITTLE ROCK, ARK. — Arkansas Gov. Orval Faubus has paved the way for the start of a program to control an outbreak of fire ants in Union County in South Arkansas.

The governor has agreed to allocate $12,000 from his emergency fund to help finance an attack against the pests. The money will be matched by $5,000 in county funds and $40,000 worth of insecticides from the federal government.

Dr. Charles Lincoln of the entomology department of the University of Arkansas said a wide area around El Dorado will be treated with pellet-type insecticide dropped from airplanes. Spraying will also be used in the fight, he added.

Carter Seymour, entomologist with the Arkansas Plant Board, said the ants have been evading hand sprays by burrowing underground for long distances to get clear of sprayed areas. He added: "With a wide-area airplane spray program we should be able to wipe them out before they get out of hand."

A similar program failed to bring the outbreak under control last year.

The fire ants were first discovered in Arkansas in 1950 in nursery properties at El Dorado, Little Rock and Magnolia.

Harlequin Bug Found In Minnesota County

ST. PAUL, MINN.—The Harlequin bug, never before recorded in Minnesota, was found recently near Slayton, Minn. Apparently the insect had been carried in on strong winds from the South, since it appeared to "swarm in" as a storm was developing. It is a pest of cabbage, turnip and radish crops in the South, but also feeds on other garden and field crops.

European corn borer survival was studied in the southern half of the state in April. Mortality varied from 47% in the Southeast to 17% in the Southwest. The state average was 27%, as compared to 18% last year and 23% in 1956.

Recently-released figures indicate that a loss of $1,490,000 was suffered by state farmers in 1958 due to the European corn borer. The loss is estimated on the basis of a 3% loss per borer per stalk with corn valued at 89¢ a bu.

No Khapra Beetles Found in Oregon

SALEM, ORE.—The first Khapra beetle survey for this year in Oregon wound up exactly where the state department of agriculture hoped it would: Not a Khapra beetle in sight. Survey entomologists concluded their initial search in feed mills, grain warehouses and elevators and other likely locations in late April. All told, 622 grain establishments were inspected, in 67 of which this was the initial search for this pest.

Another inspection of the same places will be made this summer. Oregon has conducted Khapra beetle surveys each year since 1954, but none has yet been found. Trogoderma parabile, another specie closely related to the Khapra beetle, is frequently found in feed mills in eastern Oregon, however. During the survey the Lesser Grain Borer was found in Tillamook County for the first time in Oregon; in 1957 and 1958 it was found in four places in the Willamette valley.

Alfalfa Weevil Alert Posted in New York

ITHACA, N.Y.—An urgent warning has been issued to New York farmers from the State College of Agriculture at Cornell, alerting them that the alfalfa weevil is expected to wreak heavy damage in many counties this year.

The message applies first to Orange County, especially near Westtown and Port Jervis, and to parts of Ulster, Dutchess, Nassau, and Suffolk counties. Infestation will be somewhat lighter in Columbia and Sullivan counties.

Farmers in these areas who depend on alfalfa hay for forage should prepare to spray their fields this season, the warning says. Those in other counties should also be on the watch, since the weevil spreads swiftly and widely.

Until a few years ago, alfalfa was one crop New Yorkers could grow without much fear of insect damage, it pointed out, but with the spread of the weevil from the west, those days of security are on the way out.

"Weevils can cover the state quickly by walking or flying some 40 or 50 miles a year. They cover even more territory by being able to live for several days in baled hay transported by truck or train," the bulletin reminded.

SUGAR BEET

(Continued from page 1)

escaped beets and other sources of infection; (3) aphid control; and (4) development and use of resistant sugar beet varieties.

The latter possibility is included in current research where effort is being made to develop disease-resistant varieties. Work has shown that there are differences in plant response to disease. At this time there are no known resistant varieties, but some less susceptible varieties have been found which may be useful in developing resistant types.

Ph.D. Offered

ATHENS, GA.—The University of Georgia will offer the Doctor of Philosophy degree in chemistry this fall for the first time.

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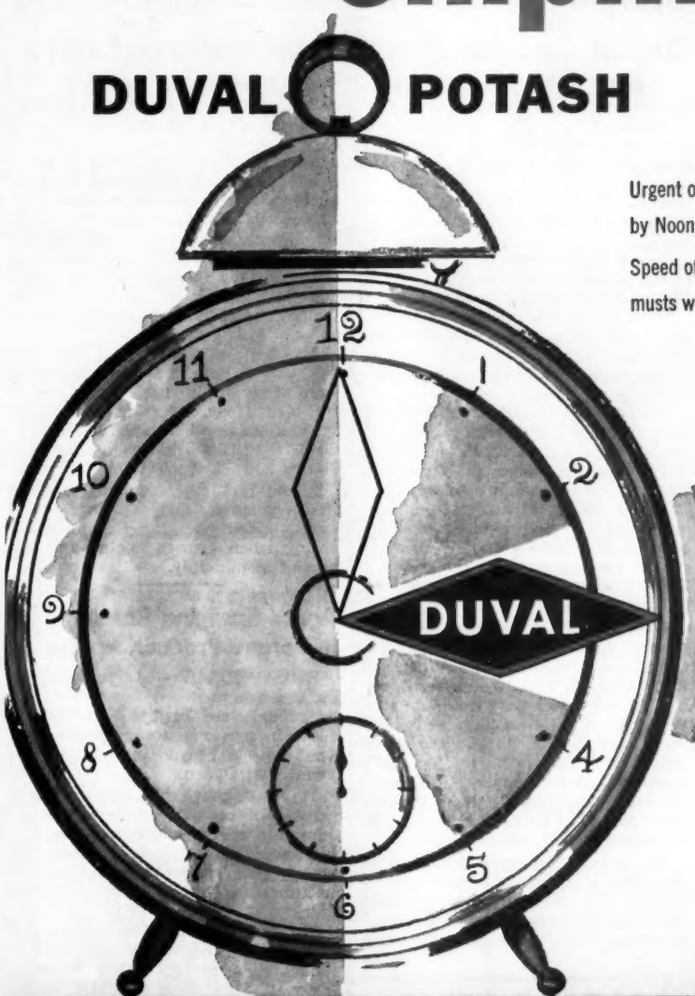

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North Carolina Grade Conference Set for May 26

RALEIGH, N.C.—A hearing for the 1959-60 fertilizer grade list in North Carolina will be held at 2 p.m. May 26 in the Agriculture Bldg. in Raleigh. Findings and recommendations decided upon at this hearing will be submitted to the North Carolina Board of Agriculture for action, according to John L. Reitzel, assistant commissioner of agriculture.

Proposals for the May 26 hearing were outlined by Dr. R. L. Lovvorn, director of research at North Carolina State College, in a letter to Mr. Reitzel, Dr. Lovvorn wrote:

"In regard to the Fertilizer Grade Conference this year, the experiment station has no recommendations relative to changing the present grade list of fertilizers. No doubt there are some grades that certain companies would like to add to the list, but these should be presented at the time of the hearings by interested parties. Insofar as the experiment station and extension service are concerned, we have an adequate number of grades to supply the nutrient needs of crops and soils in this state.

"There are some questions, however, that should be considered at the Grade Conference. Several have raised the question about the advisability of permitting the sale of a special grade fertilizer for fish ponds. The grade mentioned most frequently is a 4-4-1 ratio, which would be an 8-8-2 or 20-20-5 analysis. Requests have been received to permit the sale of this ratio of fertilizer for fish pond use without counting it as a regular field crop fertilizer. We feel this request should be discussed at the Grade Conference.

"We are becoming concerned about the large number of nitrogen solutions that is being offered for sale. This can become just as much of a problem, if not more so, than a multitude of mixed fertilizers on a grade list. We would like to hear a discussion on the desirability of limiting the number of nitrogen solutions for sale with a tolerance limit established for each of the analyses.

"Another problem that should be discussed in more detail is the inclusion of materials to control insects and diseases in commercial fertilizers. This question was discussed at some length at the Grade Hearing last year, but we plan on having a few more specific proposals to suggest at the coming Grade Conference.

"Some other minor changes may be proposed which would bring the fertilizer grade list in more uniformity with the fertilizers sold in adjacent states. We do not anticipate any major changes at the present time."

Three Firms Added to Weed Killing Project

FT. COLLINS, COLO.—Three more companies will participate in a Colorado State University research project on the use of weed and fungus-killing chemicals, and plant growth regulating materials.

Under terms of contracts negotiated with the companies by CSU Research Foundation, the botany and plant pathology section of the Colorado Agricultural Experiment Station will conduct the research.

First contract for the project, announced recently, was with Balcom Industries, Inc., Greeley, for $350. The three other participating firms and the amounts they have allocated for the work include Diamond Alkali Co., Cleveland, Ohio, $350; California Spray-Chemical Corp., Richmond, Cal., $350; and Eli Lilly & Co., Greenfield, Ind., $500.

Project leader for the one-year research program is Jess L. Fults, chief botanist and plant pathologist with the CSU Experiment Station.

MAKING WAY FOR 100th CAR—Michiana Chemical Co., Niles, Mich., recently spotted its 100th carload of raw materials for fertilizer production. Company and railroad officials were present at the tape-cutting ceremony as a tank car of nitrogen solution was shunted onto the siding for unloading. In the picture are Alf Oines, Michiana president, second from left; G. R. Peterson, industrial sales manager, New York Central Railroad; Robert W. Freske, vice president of Michiana, and Charles Lockwood, trainmaster. The firm was incorporated July 22, 1958, and shipped its first carload of granulated mixed goods in January, 1959. The company's products are distributed throughout a 50-mile radius of Niles.

Georgia Livestock Men Not Getting Most Out of Coastal Bermuda, Agronomist Says

ATHENS, GA.—Coastal Bermuda grass, bred and developed by Dr. Glenn W. Burton of the Coastal Plain Experiment Station near Tifton, has been the key to the rapid development of a healthy livestock industry in Georgia, but many farmers are not utilizing Coastal Bermuda to its full capacity.

That's the opinion of P. J. Bergeaux, extension agronomist for the University of Georgia college of agriculture. Coastal Bermuda is a hybrid plant, Mr. Bergeaux points out and, therefore, has hybrid vigor and responds to high rates of fertilizer, particularly nitrogen.

The average amount of nitrogen used on Coastal Bermuda pastures in the state is about 25 lb. of actual nitrogen an acre, says Mr. Bergeaux. Research shows that it pays to use as much as 200 lb. of nitrogen an acre on Coastal. Recent research conducted by J. L. Stephens and W. H. Marchant, agronomists of the Coastal Plain Experiment Station shows the following results:

With 50 lb. of nitrogen an acre average beef gains over a seven-year period were 256 lb. an acre. When 200 lb. of nitrogen were applied the average per acre beef gain was increased to 620 lb. This is an increase of 364 lb. of beef for 150 lb. of nitrogen or about 2.5 lb. of beef gain for every pound of nitrogen applied. Mr. Bergeaux says that this is a good return—$3.50 for every dollar invested in additional fertilizer and nitrogen.

The agronomist says that Coastal Bermuda is a versatile grass, hardy and drouth resistant which, when managed properly will provide grazing from April through September. Some farmers are extending this grazing season even longer by sodseeding Coastal Bermuda fields with oats or rye.

The key to Coastal Bermuda grass management, Mr. Bergeaux says, is application of adequate rates of fertilizer, especially nitrogen. Dr. Burton recommends a 4-1-2 ratio of nitrogen, phosphorus and potassium on Coastal. This means that for every 100 lb. of nitrogen 25 lb. of phosphorus and 50 lb. of potassium should be applied.

Mr. Bergeaux points out that the best way to determine lime and fertilizer needs of Coastal Bermuda is by soil tests. General fertilization recommendations are 400 to 600 lb. of 0-10-20 or 5-10-15 fertilizer an acre plus 100 to 200 lb. of nitrogen.

Mixed fertilizer should be applied in early spring and the nitrogen in split applications—the first in early spring when growth begins and the second in mid-July.

COTTON & PICKLES

LORMAN, MISS.—Jefferson County farmers in this community will have a new crop this season. Approximately 200 acres of cucumbers for pickles will be planted, presumably to supply the pickle canning plants in nearby Stone County. The cucumber crop is a supplementary one, maturing before the cotton crop and it is believed will provide an in-between revenue for farmers in the area, diversifying their activities.

Aerial Spraying Results In Forage Production Rise

BOISE, IDAHO—Aerial spraying of brush and weed covered forest rangeland has resulted in 200 to 400% increases in forage production, according to Floyd Iverson, regional forester at Ogden.

He said that this season 29,520 acres will be sprayed in the Intermountain region which includes Idaho. According to his report, there are about 700,000 acres adaptable to treatment with chemicals in the region.

"In the process of spraying, low value brush and weeds are killed to make moisture and nutrients previously used by them available to the desirable forage plants. Costs have averaged $2.25 to $3.50 an acre," Mr. Iverson said.

Ground rigs do some of the spraying on small areas, he said, but aerial application has proved generally more adaptable. The 1958 program consisted of 15 separate areas, varying in size from 200 to 2,800 acres, in the national forests of Nevada, southern Idaho, Wyoming and Utah. One pilot flying a converted Navy Torpedo bomber completed the project in 23 days, he added.

125 Ranchers View Range Improvement Ideas

RED BLUFF, CAL.—One hundred and twenty-five ranchers attended the annual Tehama County range tour April 10 sponsored by the Tehama County Range Improvement Committee and University of California Agricultural Extension Service.

The large crowd had an opportunity to observe range improvement practices first hand being carried out on the Roy Owens Estate Ranch, Roy and Jack Alford's and the Loren Millers.

Douglas Owens, manager of the Owens Estate, told the group as they were touring the improved areas that they had cleared some 2,000 acres of oak and brush land with a cost running from $4 to $6 per acre. He pointed out that after the brush and trees had laid three years, it was burned to get rid of debris and would also control regrowth.

On the Alford Ranch, the touring ranchers viewed 500 acres that had been cleared with chain saws and the stumps treated with 2,4-D amine to prevent sucker growth. Roy and Jack Alford put on a demonstration on using chain saws and chemical treatment. Jack Alford said when painting the stumps it was wise to put chemicals on the stump to the point of run-off. Their costs varied from $5 to $10 an acre depending on the stand of trees. Regrowth is only about 10%, it was noted.

Lester Berry, University of California extension range specialist, said that rose, crimson and Mt. Barker subclover were the varieties of clovers to plant when reseeding range lands. He recommended seedbed preparation or plant in barley stubble. He stated good results have been obtained when planting in barley.

Dr. William Martin, University of California Soils Specialist, Berkeley, summarized five years of cooperative field tests with ranchers in California on range fertilization. Dr. Martin said on the over-all average of the 45 tests involving 13,700 acres, they had produced 105.5 lb. more meat an acre on the fertilized area than the control.

The Loren Millers compared steers in their fertilized fields against ones in the non-fertilized range. Loren Miller, Sr., and Lin Maxwell, farm advisor, worked as a team in giving the test results up to April 5. The range had been fertilized with 400 lb. of ammonium sulphate an acre. For the first 66 days, steers in the fertilized area produced 60.6 lb. an acre compared to 30 lb. an acre on the control, Mr. Miller said.

Russell Christensen, manager of the ASC office in Red Bluff, told the group that the clearing of brush and oak had increased from 400 acres in 1955 to approximately 30,000 acres as of this year.

Committee members participating in the tour were D. L. Williams and John L. Moran, of Corning; Ed Teisseire, Jack Alford, Loren Miller, Sr., and Douglas Owens of Red Bluff, and Sheldon Jeffers of Paskenta.

Donald G. Smith Named New Merck Representative

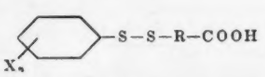
RAHWAY, N.J.—Donald G. Smith, Lubbock, Texas, has joined Merck & Co., Inc., chemical division, as sales representative for plant products, announced R. W. Hayes, marketing director for general products. Mr. Smith will work out of Lubbock in a territory extending through parts of Texas, New Mexico, Louisiana and Mississippi.

Mr. Smith comes to Merck with a background of 11 years in all phases of practical farming methods and scientific techniques in agriculture. He has operated and managed a 1,000-acre irrigated cotton and grain farm in Texas, and has served in commercial cotton trade channels as buyer and salesman.

PATENTS and TRADEMARKS

2,884,317

Herbicidal Composition and a Method for Killing Undesired Vegetation Therewith. Patent issued April 28, 1959, to John F. Harris, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours, Inc., Wilmington. The method for the control of undesired vegetation comprising applying to the locus to be protected, in an amount sufficient to exert herbicidal action, a compound represented by the formula



and the salts, esters and amides thereof, wherein X is selected from the group consisting of hydrogen, halogens and alkyl groups containing less than 5 carbon atoms; n is a positive integer less than 4; and R is an alkylene group containing less than 8 carbon atoms.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

Cyprex, in capital letters, for fungicide. Filed Nov. 15, 1957, by American Cyanamid Co., New York. First use Nov. 4, 1957.

Swat Kill, in black hand-drawn letters, for insecticides. Filed April 15, 1958, by Hayes-Sammons Chemical Co., Mission, Texas. First use Feb. 12, 1958.

7-11, in black hand-drawn numbers, for insecticides. Filed Oct. 6, 1958, by Cenol Co., Inc., Chicago. First use July 1, 1926.

Inceo, in capital letters, for rodenticides. Filed Oct. 3, 1958, by Inland Chemical Corp., New York. First use Sept. 9, 1958.

Design, circle with the words Minerals and Chemicals imprinted within the circle and the word International running through the center of the circle, for sulphate of potash for use as a fertilizer. Filed Aug. 8, 1958, by International Minerals & Chemical Corp., Skokie, Ill. First use March 28, 1950.

California Keeps Jap Beetles Under Control

SACRAMENTO, CAL.—The annual campaign for keeping Japanese beetles under control in California is getting under way.

County agricultural commissioners throughout the state are preparing to set out hundreds of traps baited with anethole-eugenol, a Japanese beetle lure, provided by the U.S. Department of Agriculture and distributed by the Bureau of Entomology of the California Department of Agriculture.

The traps will be inspected weekly or bi-weekly for the presence of the beetle which is easily recognized in its adult form by a metallic green colored body, reddish bronze wing covers and a row of white spots along its sides. The larva is grayish white.

Traps usually are placed on golf courses, in parks and residential areas and especially on commercial and military airports where flights from infested areas arrive. Live beetles were taken by trappers at Los Angeles International Airport in July, 1951, and in June, 1954, and at Travis Air Force Base in July, 1956. From its original point of discoverey at Riverton, N.J., in 1916, the pest has spread to many states.

The beetle causes extensive damage during July, August and September. In its larval stage damage is evident during late spring and early summer, feeding largely on the roots of grasses. Adults attack some 250 species of plants ranging from weeds to highly valuable fruit trees, flowers, garden crops, ornamental shrubs and shade trees.

Most Pecan Producers Fertilize Their Trees Improperly, Says Grower

WAYCROSS, GA.—Fred Voight, long-time pecan producer in this southeast Georgia area, said only about 5% of the growers fertilize their trees properly.

He said a good method of fertilizing a tree is to use three to four lb. per diameter inch plus the organic matter.

Mr. Voight said that while merchandising of pecans has changed completely in the past 35 years, it is still the most neglected cash crop for which Georgia farmers have a market.

"The greatest need today is research in the control of scab disease," Mr. Voight said. He pointed out that scab is the controlling factor in pecan production, and recommended planting Stuart and Farley varieties because they are less susceptible to scab than most trees.

The grower said that "it is safe to assume that in south Georgia 75% of the pecan trees 35 years old or more are diseased and obsolete." He pointed out that the groves of 35 years ago were planted too close and are producing poor quality fruit."

H. L. ZELLERBACH RETIRES

SAN FRANCISCO—Harold L. Zellerbach, chairman of the executive committee and acting board chairman of Crown Zellerbach Corp., has retired from the company's active management, it was announced at the corporation's annual service award dinner in San Francisco. Mr. Zellerbach was reelected chairman of the executive committee by the board of directors following the company's annual meeting. In this post, Mr. Zellerbach advises the officers of the corporation and sees that the policies set by the board of directors are carried out. Mr. Zellerbach will also continue as acting board chairman during the absence of J. D. Zellerbach as U.S. Ambassador to Italy.

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6-39

WEATHER

(Continued from page 1)

more than offset gains in the central and southern Great Plains and the southeast. A cool, dry April over extensive areas held back plant growth, but favored farming operations.

Spring grain seeding showed good progress and corn and cotton planting in the southern sections outstripped last year's laggard season.

Corn, sorghums and soybeans advance toward the main planting season in the heaviest producing areas with preliminary land preparation showing near normal progress.

Fruits suffered limited April damage. Southern peach prospects were not as bright as a year earlier but the outlook was exceptionally good in California.

Spring vegetables, excluding melons, are expected to be only slightly below last year, but a fourth less watermelons are indicated.

Pasture and hay crops show about average growth nationally, but development in several areas was retarded by cool temperatures and short moisture supplies.

Prospects for winter wheat are good by most comparisons, with the indicated, yields per acre exceeded only by last year's record smashing volume. In the northeast and Great Lakes region, winter not only brought a smothering ice-blanket at times, but also severe cold with little or no snow cover. Survival was less than earlier anticipated and stands on remaining field often are thin. Spring growth started slowly in Montana with the full effects of winter's inadequate snow cover becoming apparent only recently.

April precipitation in the southwestern plains kept hopes alive for a favorable harvest. Although precipitation was light in the Central Plains, favorable subsoil moisture gave promise of continued development. In the Pacific Northwest, early plantings are more promising than the late seedings. In the Southeast, production hopes rose as warmer temperatures stimulated growth.

Spring grain seeding generally made good April progress and was nearing completion in all except the most northern sections by May 1. In parts of the central Great Plains, seeding was late as fields dried from the heavy late March precipitation.

The northern Great Plains and upper Mississippi Valley were dusty during high winds, but planting continued as moisture was sufficient in most localities to give hope for germination. Early May rains will hasten seeding completion and promote early growth, but generous growing season rains will be needed to assure a favorable outturn.

Spring wheat was nearly all planted in southern portions of the major producing areas and nearly half finished in northern parts.

Oats were heading in Texas but were only half to two-thirds planted in the most northern sections.

Winter barley showed mostly satisfactory development except some dryland acreage in California, and spring barley seeding was well advanced by May 1.

Flax seeding in the Dakotas and Minnesota varied from one-seventh to two-fifths finished.

California rice planting has slowed to a steady pace after an early rush. Seeding was one-half to three-fifths finished in Texas and Louisiana but was further advanced in Arkansas following open April weather.

Pasture condition nationally was about average for May 1, but considerably below last year's unusually uniform lush growth.

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Liming Helps Pecans, Doesn't Induce Rosette, USDA Scientist Reports

WASHINGTON—Controlled liming of pecan orchard soils helps make nut production more profitable and does not induce rosette, a disease caused by zinc deficiency, a U.S. Department of Agriculture scientist reported.

Pecan growers, even on the basis of soil tests, frequently hesitate to apply lime to correct excessive soil acidity caused by fertilizer applications and the use of winter legume cover crops. They believe that lime encourages the development of rosette by making the zinc unavailable to the trees. Rosette results in tree-growth malformations, die-back and reduced nut production.

Experiments conducted at Albany, Ga., by James H. Hunter, soil scientist of USDA's Agricultural Research Service, showed that lime enough to correct excessive soil acidity helps trees make more effective use of acid-forming fertilizers and winter legume cover crops, resulting in more profitable yields. By this means, Mr. Hunter increased average annual nut output 3 and 4-fold on experimental plots.

Declining nut yields in recent years can be traced to increased soil acidity caused by exanded use of acid-forming fertilizers and legume cover crops on orchards, he said. Yields drop off as soils become too acid, resulting in calcium, magnesium and potassium deficiencies in the trees.

Conducted for several years, Mr. Hunter's experiments showed that lime should be applied before the lower layers of soil become too acid. Surface liming, he found, acted slowly in correcting acidity in soil layers 8 to 30 in. below the surface.

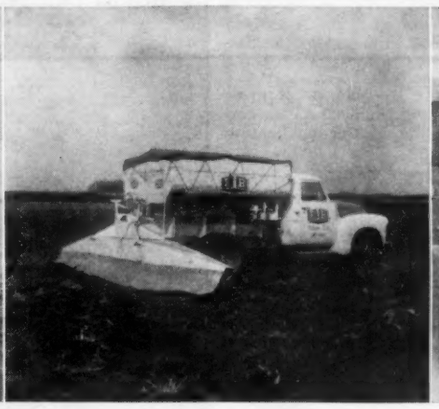
The quantity of lime needed for each experimental plot was determined by soil analysis tests, similar to those available to growers through their state agricultural experiment stations.

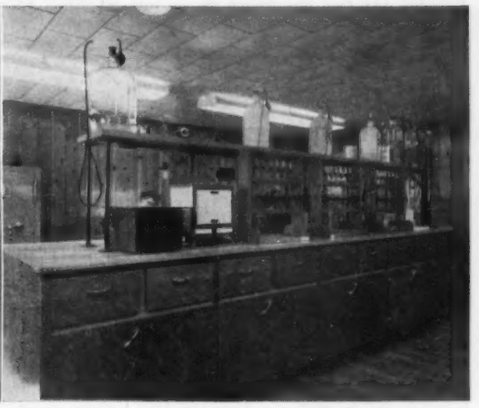
To obtain yield increases under the experiments, annual applications of sulfate of ammonia at 10 lb. per tree were made on some plots and 8-8-4 mixed fertilizer was used on others. All test plots also received a total of 15 lb. of zinc sulphate per tree in the first three years of the experiments.

Rosette was cleared up in two years, but yields were unsatisfactory through the sixth year at which time lime was applied. Five years after lime was applied yields were seven to eight times greater than before lime treatment.

Results obtained by Mr. Hunter are borne out by experiments in Alabama where the combined use of lime and zinc sulphate provided better yields of nuts and controlled rosette disease.

In both instances, the research results are applicable to pecan orchards on light-textured, acid soils in 12 southern and western states. Total production in these states ranges from 125 to 200 million lb. a year.





THE REDWOOD COUNTY FARM BUREAU SERVICE CO., at Wabasso, Minn., stores 1,200 tons of bulk fertilizer in the warehouse shown in the picture above left. The warehouse is equipped with six bins and mixing equipment. In the center photo one of the company's four spreader trucks is shown hard at work. In the right photo, the firm's modern testing laboratory is shown.

Motto Guides 3,000-Ton Fertilizer Business

By J. I. SWEDBERG
Croplife Special Writer

"Give the customer what he wants, when he wants it, and how he wants it." That is the motto for success in the fertilizer business, says Richard Raddatz, manager of the Redwood County Farm Bureau Service Co. at Wabasso, Minn. Selling 3,000 tons of fertilizer with an annual gross of over $200,000 is the major part of the business, but gas and oil, feed, chemicals and farm equipment are handled also.

Factors in the successful selling of fertilizer are: (1) fast service, (2) applying fertilizer, (3) soil testing, (4) credit, (5) advertising, and (6) education.

In speaking of good service Mr. Raddatz says that "when a customer gets it he won't argue about price."

In the fertilizer end of the business the company annually handles 2,000 tons of bulk, 1,000 tons of bagged material, 100 tons of liquid nitrogen, 1,000 tons of limestone, and conducts an up to date soil testing service.

Applying fertilizer for farmers is important in making sales. Of the bulk material handled the company applies 1,500 tons as well as side dressing 1,500 acres with liquid nitrogen.

Two 8-ton and two 4-ton spreader trucks are used in applying dry material. For this service a charge of 60¢ an acre and $2 a ton is made. The material is spread at an average rate of 250 lb. an acre on 12,000 acres.

A close estimate of income and expense in the spreading operation follows:

Income	
12,000 acres @ 60c	$7,200
1,500 tons @ $2.00	3,000
Total income	$10,000
Expense	
Annual depreciation on 4 trucks	$5,000
Labor cost	3,000
Truck fuel and oil	2,000
Total expense	$10,000

These figures do not include lime spreading or side dressing, however the side dressing is done with special applicators, and the lime operation is relatively minor. Very little if any profit is shown, although the operation is self supporting. The value, says the manager, is the service which pays out in additional sales.

Mr. Raddatz reports that a spreader truck depreciates practically 100% in three years, which accounts for the $5,000 item on the $15,000 investment in four trucks.

Two of the trucks are owned by individual operators, the other two being the property of the company. Owner-operators receive the charges made to the farmer, and the collections are made by the company. Six acres an hour is an average rate for spreading.

Side dressing is done on 1,500 acres at an average rate of 55 lb. available N an acre. Two tractor operated applicators and three pull type machines are used. Pull type equipment is rented to farmers at $15 a day, and boys are hired to operate the tractor rigs. For the latter equipment a charge of $1 an acre is made. The machines are home made.

"Side dressing is on the way out," Mr. Raddatz says. Farmers are coming to feel that they get equal benefit by adding nitrogen to the mixture applied in the fall. When this is done, the company makes the blend.

"In this cold climate and with the heavy soil we have, we think that fall application of nitrogen is equally as beneficial," he says. "And it saves one operation."

A factor in the practice is the growing tendency to follow corn with corn, which requires extra nitrogen to decay the stalks.

Liquid nitrogen is priced at $82 a ton for the 41% material. No complete liquid formulas are used.

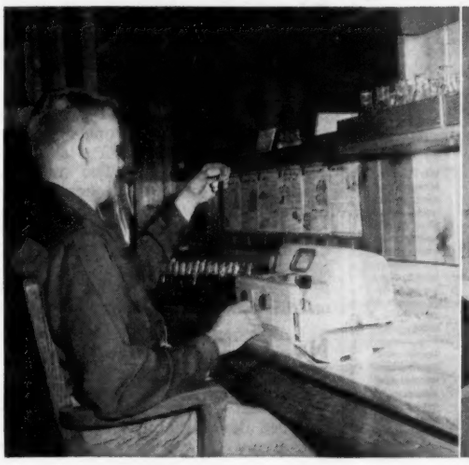
The use of limestone is spreading; about 1,000 tons were spread in 1958 on 400 acres. Cost to the farmer for this operation varies from $10 to $15 an acre depending on the distance from the source, which is the Mankato (Minn.) Ag-Lime Co.

Fertilizer spreading operations are at their peak in the March through May, July, and August through October periods. The latter period is when spreading material for fall plow down is done. Side dressing is begun as soon as the corn can be rowed, and continues until about July 1.

In the bulk storage program a separate building with six bins and

(Turn to MOTTO, page 16)

QUONSET HUT type construction is the feature of the main store of the Redwood County Farm Bureau Service Co. in Wabasso, Minn. (right). In the picture at left below, the company's agronomist, Lyle Syverson, tests one of the 2,000 soil samples he receives annually. The lower right photo shows a truck of bagged fertilizer being unloaded. Some 1,000 tons a year is handled.



WHAT'S NEW IN PRODUCTS · SERVICES · LITERATURE

To obtain more information about items mentioned in this department simply: (1) Clip out the entire coupon in the lower corner of this page. (2) Circle the numbers of the items of which you want more information. Fill in the name and address portions. (3) Fold the coupon double with the return address portion on the outside and fasten the edges with a staple, cellophane tape or glue. (4) Drop in the mail box.

No. 6905—Chemicals Display Rack

A wire display rack, filled with products, is being distributed by the Douglas Chemical Co. as part of a farm grain sanitation program to help farmers keep their on-the-farm stored grain free of damaging insects. The rack, which stands 40-in. high, is topped by a three color, 8-in. sign. The width of the stand is 29 in. The purpose, according to company literature, is to have dealers join the Douglas 1959 farm grain sanitation program. More information is available by checking No. 6905 on the coupon and mailing to this publication.

No. 6910—Peanut Fungicide Guide

A Terraclor application guide for peanuts giving detailed information on the use of this soil fungicide is now being distributed by Olin Mathieson Chemical Corp. The four-page, illustrated guide is designed to help control Southern blight. It contains a compilation of work done by Olin Mathieson fieldmen, federal and state research personnel and growers. For more information check No. 6910 on the coupon and mail.

No. 6907—Organic Fungicide

Information about "Dyrene," an organic fungicide and its use on celery, has been made available by Chemagro Corp. Results of six years of research and testing of the product are given. Other crops on which it is effective are also discussed. Recommendations as to use, spraying techniques and application instructions are listed. For details, check No. 6907 on the coupon and mail to this publication.

No. 6909—Mobile Power Sprayer

A mobile power sprayer that produces a steady flow instead of pulsating streams is now available from the John Bean Division of Food Machinery & Chemical Corp. The unit,

called the Trojan, sprays insecticides, liquid fertilizers, and root-feed compounds. Feature of the sprayer is a centrifugal pump of which all major parts are made from a glass-fiber reinforced plastic, Thermaflow 100, developed by Atlas Powder Co. The pump has only one moving part. The unit delivers steady pressure at any engine speed, the company noted, and is driven by a 2½ h.p. gasoline engine. It can deliver up to 3 gal. a minute at 60 lb. per sq. in. of pressure. The stream will reach a height of 30 ft. A 15-ft. hose is designed for high-pressure corrosion-resistant service. Check No. 6909 and mail for details.

No. 6908—Light-Weight Hand Pump

A light-weight hand pump designed to handle liquid fertilizers, tractor fuels, gasoline, lubricating oils and other solutions, has been announced by the Wayne Pump Co. Called DD-1, the pump can be supplied with any required accessories, including regular or no-drip spouts, pedestals, suction pipes, hoses, meters and check

valves. Two special composition diaphragms and two sets of reinforced valves provide pumping on both push and pull strokes. Delivery is about 20 gal. per 110 strokes. The stainless steel shaft operates in a heavy-duty nylon bearing, which is isolated from liquid flow by the double internal diaphragm. The company lists ease of cleaning as one of the unit's major features. For details, check No. 6908 on the coupon and mail.

No. 6911—Fruit Grower's Chart

Colloidal Products Corp. has announced the availability of the Western Fruit Grower's "Compatability

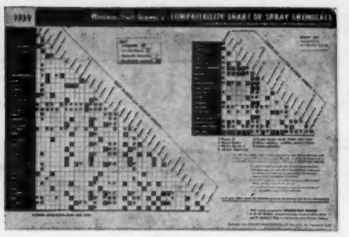


Chart of Spray Materials," prepared by Dr. Harold F. Madsen of the University of California and Dr. Stanley C. Hoyt of Washington State College. The chart is printed on a plastic card, in color and is shirt pocket size. Copies can be obtained by checking No. 6911 on the coupon and mailing to this publication.

No. 6906—Bean Insecticide Booklet

Use of Sevin insecticide on beans is described in a folder available from Union Carbide Chemicals Co., Division of Union Carbide Corp. Features of the insecticide are outlined in the booklet and application rates and directions are included. Copies of the folder designated F-40471, can be obtained by checking No. 6906 on the coupon and mailing to this publication.

Also Available

The following items have appeared in previous issues of Croplife. They are reprinted to help keep dealers on the regional circulation plan informed of "What's New."

No. 6900—Weed Killer Film

A 10 minute, one-reel movie featuring the "fate of five noxious weeds," has been released by E. I. du Pont de Nemours & Co., Inc. The film is 16 mm., full color, with sound. Field bindweed is the chief "villain" of the film, but leafy spurge, Russian knapweed, Bur ragweed and Canada thistle also play prominent roles. Du Pont's weed killer, "Trysben" 200, is also featured. The film is available for showing before agricultural groups. For more information, check No. 6900 on the coupon and mail.

No. 6901—Spreader Literature

Literature describing the Challenger lime and fertilizer spreader has been published by the manufacturer, Highway Equipment Co. The Challenger is a positive feed, self-unloading lime and fertilizer spreader which offers either a single spinner with an 18 in. conveyor or twin spinners with a 24 in. conveyor. For copies, check No. 6901 on the coupon and mail.

No. 6904—High Clearance Sprayer

A new model of the Blue Boy high clearance sprayer has been announced by John Blue Co., Inc. Features of the sprayer include adjustable rear tread, high safety rating in that the driver turns with the front wheel, 58 in. standard clearance with 72 in. clearance optional, positive foot control clutch, direct drive pump, low center of gravity, hinged front fend-

Send me information on the items marked:

- ☐ No. 6895—All Purpose Sprayer
- ☐ No. 6896—Grass Control Promotion
- ☐ No. 6899—Drosophila Fly Control
- ☐ No. 6900—Weed Killer Film
- ☐ No. 6901—Spreader Literature
- ☐ No. 6902—Trailer Sprayer
- ☐ No. 6903—Film on Phosphate
- ☐ No. 6904—High Clearance Sprayer
- ☐ No. 6905—Chemicals Display Rack
- ☐ No. 6906—Bean Insecticide Booklet
- ☐ No. 6907—Organic Fungicide
- ☐ No. 6908—Light-Weight Hand Pump
- ☐ No. 6909—Mobile Power Sprayer
- ☐ No. 6910—Peanut Fungicide Guide
- ☐ No. 6911—Fruit Growers Chart

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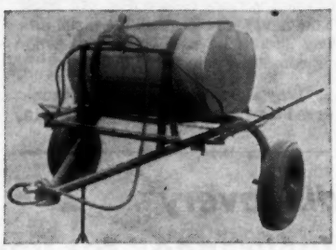
ers for easy clutch and drive chain adjustment, adjustable height boom and adaptability to dusting, spraying and defoliating, company literature said. Details can be secured by checking No. 6904 on the coupon and mailing to this publication.

No. 6902—Trailer Sprayer

A new "MinIowa" model dual X15 trailer sprayer is being introduced by Ferguson Enterprises. The unit, which incorporates a multiple assembly design, was developed to permit the boom to be mounted either in front or behind the axle, subject to need or preference. The multiple assembly feature also makes it possible



to mount the tank crosswise or lengthwise without changing the cradle assembly, the company says. The company offers a choice of four tank models with the basic trailer. Boom assemblies are available in six and eight row widths, in either aluminum or PVC rigid plastic pipe laid in and reinforced by steel angle iron. For details, check No. 6902 on the coupon and mail to this publication.

No. 6899—Drosophila Fly Control

"Drosophila Fly Control" is the title of a booklet recently published by Chemical Insecticide Corp. The booklet contains data compiled by the research staff of the firm, and the information is designed as a guide to effective control of the Drosophila fly. Pyrix 10, an insecticide developed by the company, is discussed at length. A section on how to control the fly under various conditions is included. A list of the firm's other products is also presented. For copies, check No. 6899 on the coupon and mail.

No. 6903—Film on Phosphate

"Mountain of Life" is the title of a 24-minute motion picture in full sound and color telling the story of phosphate fertilizer, that is being offered to groups throughout the west who are interested in agriculture. The film was produced by Western Phosphates, Inc., manufacturer of Anchor Brand fertilizers, and Wilson & Geo. Meyer & Co., Intermountain, Western Phosphates' sales agent. The 16-mm film describes the role of phosphate fertilizers in farming and illustrates mining and processing of phosphate. Highlights include actual fertilizer field studies. Check No. 6903 on the coupon and mail to this publication for details.

No. 6895—All Purpose Sprayer

A new model all purpose sprayer has been introduced by Spra-White Chemical Co. Called the "Spra-Master," the unit features a fiberglass

tank and "boom extenders." The fiberglass tanks are new with the company this year and are available in 200 gal. capacity only, the firm said. The tanks are also available separately for mounting on any trailer or trailer sprayer and can be ordered in any color when ordered as tanks alone, the company says. The Spra-Master carries a three section, 20 ft. aluminum or galvanzied steel boom. Boom extender nozzle attached to the ends of the boom as standard equipment offer a continuous spray pattern approximately 10 ft. beyond each end of the boom, the company says. For details, check No. 6895 on the coupon and mail.

No. 6896—Grass Control Promotion

A promotion program based on trial of the product has been launched by the Dow Chemical Co. The program will support the sale of Dowpon as a grass control agent, the company said. Feature of the promotion will be the offer of free trial packages of Dowpon through Dow dealers, the company said, and all

dealers signing up for the program will be stocked with 2 oz. packets of Dowpon to be given away to customers. The sample contains enough herbicide to treat 225 sq. ft. in a fence line, along a driveway or around a building, the company said, and the material can be applied with usual hand equipment or even with a sprinkling can. Details can be obtained by checking No. 6896 on the coupon and mailing to this publication.

Agronomist Links Rise Of Head Smut to Hybrids

LUBBOCK, TEXAS—The increase in head smut of grain sorghums may be definitely related to the hybrid varieties now being grown. Dr. N. W. Kramer, agronomist at the Lubbock Experiment Station, says some of the most susceptible varieties have become popular with farmers.

Head smut has been especially noticeable in the northwest part of the High Plains, where some fields were 20% infected. Other areas with a high incidence include the Coastal Bend country, which is second in grain sorghum production.

BOOST FROM BORON

EXPERIMENT, GA.—Tests conducted by Julius M. Elrod, associate agronomist at the Georgia Experiment Station at Experiment and Perry, Ga., showed that 10 to 20 lb. per acre of boron will increase the yield of alfalfa hay about 10%.

can you identify this cotton insect by its silhouette?

You have no doubts about this one. It's a boll weevil.

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Diamond Chemicals

OSCAR & PAT

By AL P. NELSON
Croplife Special Writer

A self satisfied smirk crept over Oscar's face as he sat at his desk, with a stack of completed discounts at his fingertips. Figures on a desk pad showed that by discounting $11,000 worth of bills—paying them by the 10th—he had saved 2% or roughly $220.

"Almost enough to pay that Irisher's salary," he said, "Ach, and it's two times as much as he is worth."

Oscar could easily have delegated the discounting chores to Tillie who did most of the other bookkeeping, but it was a chore he loved, and so he retained this privilege. He got a list of delinquent accounts from Tillie, too, sometimes three or four times a month. Displayed prominently on his desk, this delinquent account list was like a red flag to a bull, and there were times when Oscar directed enraged glares at magazine reading Pat, his partner, seated at a desk near him. But Pat apparently was immune to this type of mental telepathy, or if he weren't, he chose to ignore it.

Today, because he felt so good about the discounting, Oscar picked up the local Clarion Bugle, which had just been delivered. Usually he did not waste time reading the paper at work—his was the philosophy that a man owed all his business time to his business—but today he was committing heresy.

As he turned to page two of the newspaper, a howl of rage escaped him. His fist thumped on the desk. "That Irisher!" he shouted. "Ach, he has gone and done it again."

"Done what?" asked plump, nervous Tillie Mason, the bookkeeper.

"Run a big adt in the newspaper. Now he's got an idea he calls a Comeback Customer Grab Bag!"

Tillie took off her horn rimmed glasses. "Oh, yes, I heard him say something about that. Let me see the ad."

Oscar got up, walked to Tillie's desk and threw down the paper. "Ach, efferything goes along goot, and then that Irisher spoils it. Why can't he sit still for a minute? Why does he always haf to be jumping from this idea to that—all of them expensive?"

Tillie chuckled. "Oh, this sounds good. Did you read all the copy, Oscar?"

"No," Oscar said stubbornly. "Better Pat should spendt time collecting than writing silly adts."

Tillie read smilingly, " 'We Like You. Come and See Us. Especially you folks who haven't been in our store for a long time. We know we can't please everyone — but we'd like another chance. Maybe you don't like us, or our relatives, or maybe we hadn't shaved the day you came in.

" 'But let's let bygones be bygones. This Is Comeback Customer Week. Come in and see us—register as a Comeback Customer—nothing to buy —and then reach into a big box and pick yourself a Grab Bag of valuable merchandise . . . It's all yours. There's a Gripe Barrel nearby, too. If you want to drop in a note telling us we can kiss and make up, we'd really appreciate it.

" 'Come back, dear customer, come back. We'll make it worth your while.' "

Oscar let out a roar. "Ach, that crazy Irisher. All the deadbeats we've been so happy to get rid of, will now come back and rook us. And he gifs them presents, too. He shouldt be Santa Claus, not a fertilizer dealer. Thousands of business men have gone broke giving schtuff away. The only way you can make money is sell something for more than it cost you. Now I know all Irishers is crazy."

"Oh, I think it's a fine good will building idea," Tillie said. "This is splendid publicity. We'll get back some good customers who went elsewhere, and they'll buy a lot of merchandise. And it won't cost us very much."

"Cost much?" roared Oscar. "Are you crazy, too? This big half page adt costs money. And where is the schtuff he is going to put into the grab bag?"

Tillie smiled, as though an idea had come to her. "I'll bet I know. When you were in the washroom the other day, Pat got a phone call. I heard him tell some bankrupt farm supply dealer he'd give him $75 for all that odds and ends stock he showed him, and not a cent more."

"Odds and endts schtuff!" shrieked Oscar.

Tillie nodded. "I heard Pat mention things like folding yardsticks, bird houses, serrated knives, frozen food and metal and wood saws, garden sticks, seeds, notebooks, insecticides and things like that. I'll just bet that he intends to use those things for the Comeback Customer Grab Bag. Oh, I like excitement like that, and I'll bet the customers do, too."

Oscar's lips were a thin line. "He shouldt talk things like that offer with me, but he is afraidt. He knows I will say no. Who was that dealer he talked to? I can cancel the order."

"I don't know, Oscar."

Oscar paced up and down, muttering in German, terms like "dumbkopf" and others.

"Pat handles his end of the business and you handle yours," Tillie pointed out, trying to smooth the troubled waters before Pat got back. "You never ask him about discounts. Why should he ask you about when to promote a sale and advertise?"

"Why shouldn't he?" Oscar thundered as he stopped suddenly. "He

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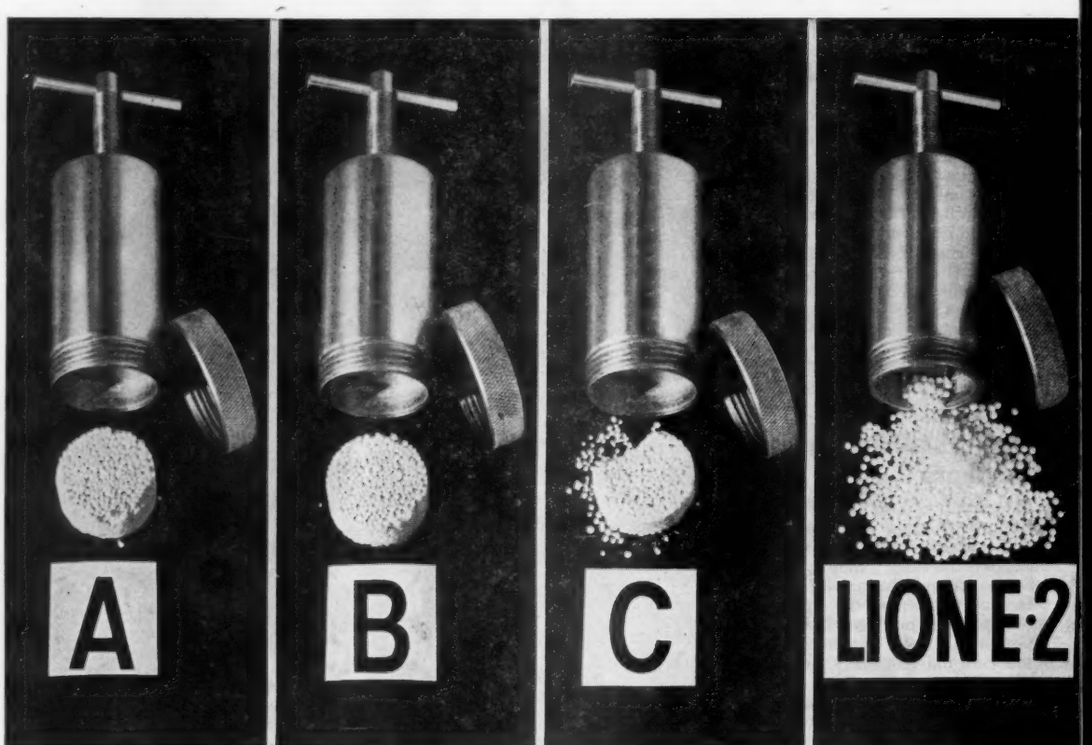


COMPRESSION CHAMBER TESTS PROVE NO OTHER AMMONIUM NITRATE CAN MATCH NEW LION E-2 FOR NO-CAKE, DUST-FREE PERFORMANCE

No more customer complaints, costly returns, double handling or extra bookkeeping when you sell new Lion E-2 no-cake ammonium nitrate fertilizer. Here's the whole profit story.

New Lion E-2 is the first truly non-caking ammonium nitrate. Lion E-2 was developed by Monsanto scientists seeking to end one of the major problems plaguing you and your customers: fertilizer caking. Tested in the field under all extremes of temperature and humidity, Lion E-2 just wouldn't cake.

New Lion E-2 won't gum up, clog or bridge in your customer's spreader. The uniform prills are 50% harder . . . free of irritating dust and fines. They won't break down, crumble or cake either in shipment or storage.

New Lion E-2 takes 20% less of your storage space because it's super-dense. It has the greatest density of any ammonium nitrate made today. Lion E-2 saves your time, storage space, and makes your handling job easier.

New Lion E-2 lengthens your selling season because it's storage-stable. It is not readily affected by temperature changes or humidity. Your customers can buy any time and store safely until used. LION E-2 may well prove your big *year-round* volume builder!

Lion E-2 is guaranteed not to cake in the bag in your place or on your customers' farms. From all angles, Lion E-2 is the superior-quality ammonium nitrate . . . yet it sells at ordinary ammonium nitrate prices. Sell your customers the best . . . you'll keep old customers coming back and gain many more new ones who want the best: new Lion E-2.

shouldt ask me because he's crazy and I'm not, that's why. He doesn't know what a dollar bill looks like anymore—because it goes in and oudt of his pocket so fast. He's got a disease, a bad one—spendting. I can't standt it much longer. I don't know where to safe anymore. There is no place else to economize."

Tillie said in a patient voice, "Maybe you economize too much, Oscar. Business nowadays is different than it was years ago. Now there is lots of competition. Customers have a wide choice of places to buy. You have to be nice to customers to get them into your store. If you get them in, then they see displays and buy. You can't scare them off with threats."

"Ach, that is chust where you are wrong," Oscar said sharply. "You have been listenin' to that Irisher. When all the fancy display and the sellink shenanigans is offer, there is only one thing that's important to me—and it should be important to Pat. Und that is—how much profit did we make? That is what we are in business for, and if we get our costs too high and gif away too much schtuff we are kaputt. That I know, and that that Irisher don't know. He lifs in a dream."

Tillie sighed and got up. "Well, here comes Pat. You tell him—I'm exhausted. I'll take a half hour to get coffee. My ulcer won't stand listening to you fellows wrangle."

MANY SOIL TESTS

NASHVILLE, TENN.—Over 15,000 soil samples have been analyzed in the state soil-testing laboratory at Nashville since the first of January of this year. Farmers are receiving lime and fertilizer recommendations from the laboratory at the rate of about 400 a day, according to Joseph N. Matthews, assistant U-T Extension agronomist.

19 Experts Attend IMC Soils Seminar

SKOKIE, ILL.—Nineteen agricultural research experts from 12 major colleges participated in a recent soils research seminar at International Minerals & Chemical Corp. to discuss and present reports on projects involving magnesium and potassium in plant growth.

The conference at IMC headquarters here was sponsored jointly by the company's potash division and the research department of the research, engineering, and development division to provide an opportunity for ready exchange of information between participants, both visitors and IMC representatives. The company's potash division allots approximately $50 000 annually for grants-in-aid on magnesium and potassium research projects in major colleges as part of IMC's overall grants-in-aid program.

Sales in the States

TALLAHASSEE, FLA. — Nathan Mayo, commissioner of the Florida Department of Agriculture, reported that during March 207,644 tons of fertilizer were consumed in Florida. This broke down into 139,497 tons of mixed fertilizer and 68,147 tons of fertilizer materials.

STILLWATER, OKLA.—Fertilizer sales in Oklahoma during March, 1959 amounted to 14,928 tons. Most popular grade was 10-20-10, which sold 4,285 tons. Most popular material was normal superphosphate, which sold 2,730 tons.

CLEMSON, S.C.—Fertilizer sales in South Carolina during March, 1959 amounted to 242,056 or 35,827 tons more than March a year ago, reported B. D. Cloaninger, director of the fertilizer inspection and analysis department of Clemson College.

LITTLE ROCK, ARK.—Fertilizer sales in Arkansas during March, 1959 nearly doubled the March, 1958 figures with 83,695 tons being sold this year, compared with 48,121 tons last year, reported the State Plant Board. Most popular grade was 5-10-5 with 6,273 tons sold. Most popular material was ammonium nitrate, with 14,013 tons sold.

RALEIGH, N.C. — During February, 1959, 133,076 tons of fertilizer were sold in North Carolina, reported L. Y. Ballentine, commissioner, North Carolina Department of Agriculture. This total was 40,788 tons more than February, 1958.

MONTGOMERY, ALA.—Fertilizer dealers in Alabama sold 56,731 tons of fertilizer during February, 1959, reported R. C. (Red) Bamberg, commissioner, Alabama Department of Agriculture and Industries. This total amounted to 10,022 tons more than February a year ago. Most popular grade in the state was 4-10-7, with 15,909 tons sold. Grade 4-12-12 sold 15,093 tons.

PORTLAND, ORE.—Fertilizer sales in Oregon during 1958 remained approximately the same as the year before, with 182,687 tons being sold compared with 183,719 tons sold in 1957, reported the Oregon Department of Agriculture.

About 13,125 tons of agricultural minerals and 49,079 tons of lime were also sold in 1958.

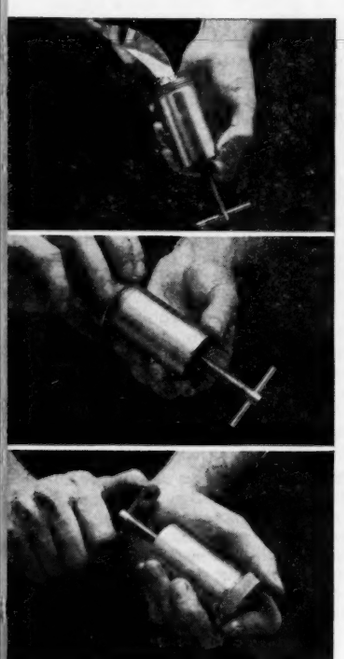
COTTON STILL KING

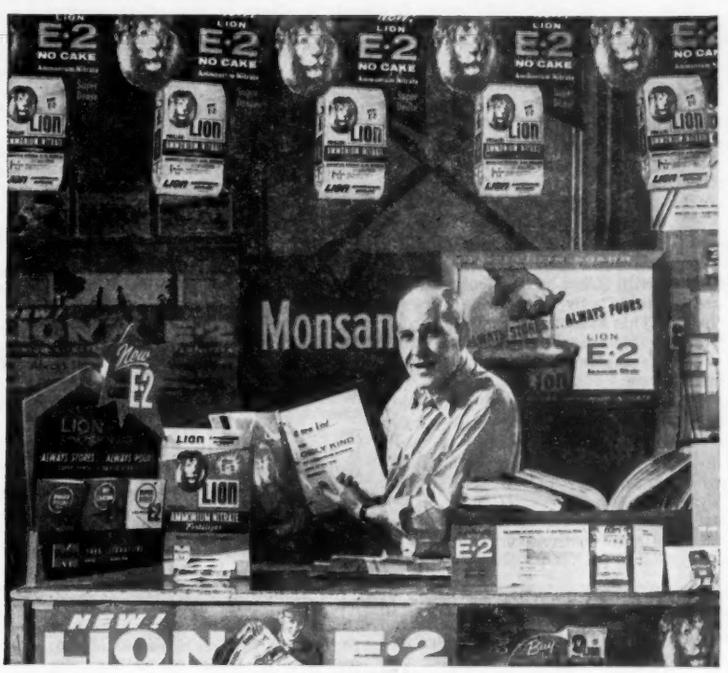
DALLAS, TEXAS—Despite the rising cost of labor and production expenses, cotton is still king in Texas. Last year the average gross income from each harvested acre of cotton was $140.12 compared to $39.73 for all other crops.

These figures were given by C. B. Spencer of the Texas Cottonseed Crushers Assn. He said the average yield in 1958 was 387 lb. of lint cotton an acre, which is the highest since records were started in 1866. It was also 121 lb. an acre higher than the average for the previous five years.

Several factors have contributed to this increase; namely, better production methods, better seed, more fertilizer and more rigid insect control. The expanding irrigation in some parts of the state also helped increase yields.

CAKING PROBLEMS FOR GOOD!





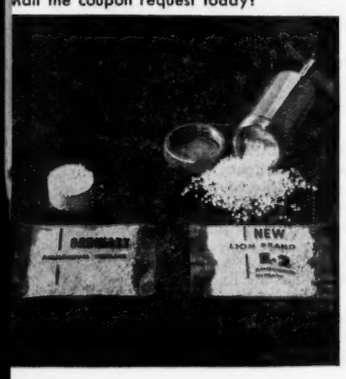
HOW TESTS WERE MADE . . .

1. Steel compression chamber is filled with prilled ammonium nitrate.

2. Steel cap closes chamber.

3. Pressure up to 600 lbs. per sq. inch is applied by turning T-bar.

4. See Lion E-2 tested in your own store . . . compare results with any other ammonium nitrate you might be carrying. Mail the coupon request today!



CONVINCING ADVERTISING AND STORE PROMOTION NOW BUILDING FARMER INTEREST IN LION E-2

Eye-catching, hard-selling advertisements in FARM JOURNAL, CAPPER'S FARMER, PROGRESSIVE FARMER, FARM AND RANCH are backed up by state farm publications, local county newspapers. Your customers will be reading about, asking about Lion E-2. **Colorful Promotional Aids Hike Volume.** Window and wall banners . . . facsimile bag cutouts to hang from the ceiling . . . full-color framed bulletin board . . . literature and sample dispenser for your counter . . . ad mats for your local use . . . all designed to help you do a bang-up sales job on new Lion E-2.

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Always stores . . . Always pours

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NEW BROCHURE gives you all the big selling advantages.

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☐ Please send free copy of "The Lion E-2 Brand Story"
☐ I would like to see Lion E-2 demonstration
☐ I am now handling Lion E-2
☐ I am not now handling Lion E-2

Name _____

Firm Name _____

Street or R. R. No. _____

City or County _____ State _____

Suggestion Selling Accounts for 50% Of Firm's Volume

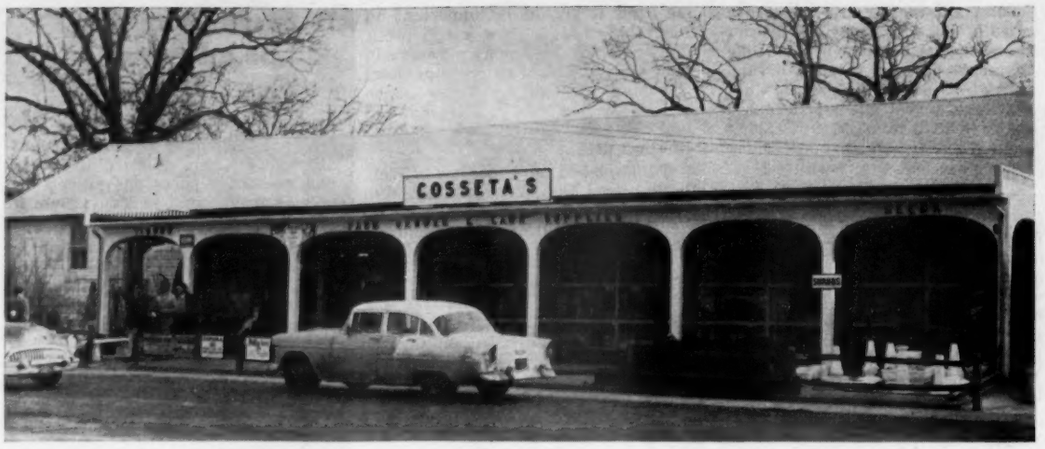
By PHIL LANCE
Croplife Special Writer

Suggestion selling accounts for approximately 50% of the sales volume handled by Cosseta's Farm & Garden Center, Vineland, N.J.

"Customers come in with one or two items in mind and it's up to the person contacting the customer to sell them more merchandise," says Charles Cosseta, owner. "By knowing the merchandise that you are selling to the customer and suggesting tie-in products with it, the opportunity for making the additional sale comes easy. We don't use pressure in making these added sales nor do we rattle off a long list of items in the hope that some of them will attract the customer's attention. Rather, we suggest the item or items that are closely associated or related to those already selected by the customer and, in this way, open the opportunity for additional add-on sales."

If a farmer is buying seed, it is only natural to mention fertilizer or insecticides. If he is buying feed, it is natural to look at the new feeders available in the store and, if he has come in to purchase some poultry supplies, it stands to reason that he might be interested in loking at additional products that the store may be stocking in this line. As proof that suggestive selling does help to build up the sale, Mr. Cosseta explains that practically half of his annual sales volume is credited to this factor.

The business was founded by Mr. Cosseta in 1947 with an initial investment of $10,000. Selected lines of farm and garden equipment and products were stocked, and Mr. Cosseta used his suggestive selling system in reverse to help him build up the stocks that customers would want. That is, after every sale the customers were asked what additional products they would be interested in shortly after purchasing the items already selected. In their own minds, the customers would connect different merchandise or products that they needed and were related to that which were already purchased. Then, they would make their suggestions. Mr. Cosseta listed these in his "want book" and these are the lines of merchandise that he added to his store.



THIS IS COSSETA'S Farm & Garden Center in Vineland, N.J. Outdoor displays are utilized under the canopy during good weather and act as good traffic stoppers.

"If a customer bought a shovel, it is very possible that he would be later interested in a hoe or some other tool," says Mr. Cosseta, "and the same situation followed through on garden equipment and related lines that we stocked. We ordered the items that the customers recommended, and we found that these items helped us to round out our stocks so that we would have complete lines which were desired by everyone."

Store inventory, today, is placed at $50,000 with items being stocked that are "wanted" by the average customers. This assures a constant turnover of this merchandise which has helped to make this business a successful one.

In stocking merchandise in this farm store, the farm store dealer has a set policy of buying at least two lines in a particular classification which represent the lowest and the highest re-sale prices. If more lines are added, those closer to the higher re-sale values are added. This policy has resulted in having this store sell 80% of its quality lines in contrast to its low-end merchandise.

"We try to obtain the item in the lowest price merchandise classification to combat competition and show our customers that if it is price they are interested in, we have it," advises Mr. Cosseta. "Then, we show them the highest quality item in the particular merchandise classification we have, and the customer can very quickly ascertain the difference. It is for this reason that we make the bulk of our sales in our quality lines. This works the same way whether the sale is power lawn mowers, tools, seed, fertilizer or any other product that we handle. By making it our business to know our merchandise, we know exactly how to feature the quality line to the customers so that it has greater appeal to them."

A customer comes in and asks Mr. Cosseta for grass seed in a price that is equal to that featured at a discount outlet. Mr. Cosseta shows him the particular seed that matches this price. Then, he shows the customer his quality line of grass seed and tells him the difference between the two. For the small difference involved, the customer puts aside the purchase of his original intent and "upgrades" himself to the quality seed line.

"If one of our customers inquires about fertilizer, we immediately show him the top quality line that we handle," says Mr. Cosseta. "It is very possible that the customer will say that he can obtain fertilizer at a lesser price, and it is at this time that we show him that we have one to compete with it. However, we also show him the ingredients used in the manufacture of each so that he can come to his own decision—and understands that he is only getting what he is paying for. In nine cases out of ten, we usually wind up selling the quality fertilizer line. There are occasions when customers still stick to price, and we satisfy them with the price line that we stock."

This farm store, measuring 40 ft. by 100 ft., is set up on a semi-self-service basis. Floor displays of merchandise are made wherever possible, and these items are price-marked to stimulate customer selection. Store personnel assist customers interested in power equipment, tools and other merchandise that require a little discussion. By taking an interest in what the farmer or homeowner may term a problem, other sales opportunities arise and Mr. Cosseta or his sales clerks are ever alert to bring them to the attention of the customers. Charge accounts are constantly prompted with at least 25% of the store volume being handled on a 30 day basis. Charge accounts are another stimulant to buying and customers are urged to take advantage of them.

The store rents almost any type of equipment, tools or related lines that it sells. This service is another attraction and helps to build up store traffic. If customers rent a specific tool or piece of farm equipment two or three times, they are told that their rental fees can be applied towards the purchase of the item if they decide to buy it. This has helped to make sales to customers who might otherwise never have purchased the specific item.

This farm store uses newspaper advertising periodically. Starting in early spring, it sponsors several radio spots weekly over the local station. Playing up the theme "If you want it —we have it" the store keeps adding merchandise that customers say they would be interested in and then feature same when they come in. This has resulted in the store building up its stock of merchandise which has consistent appeal to its customers.

CHARLES COSSETA (kneeling in the photo at left) is the owner of Cosseta's Farm & Garden Center. Here he shows operating procedures of a sprayer to two customers. In the photo below Mr. Cosseta discusses garden fertilizer with an interested customer.

FARM SERVICE DATA

EXTENSION SERVICE REPORTS

Nitrogen's role in corn yields was brought out in a report on research conducted on aspects of corn production, including irrigation, nitrogen and plant population.

Three-year-long experiments were described in detail in a new bulletin entitled "Irrigation, Nitrogen, and Plant Population on Corn," which has been issued by the Georgia experiment station.

The booklet was written by F. C. Boswell, former assistant agronomist at the Georgia experiment station; O. E. Anderson, associate soil chemist, and S. V. Stacy, head of the department of agronomy at the same station.

The experiments were conducted on sandy loam at Experiment, Ga., in the Piedmont Plateau, and silt loam at Calhoun, Ga., in the Limestone Valley. Hybrids were grown at plant populations of 10,000, 15,000 and 20,000 plants per acre.

The corn plots in the 1955 tests were given 96 lb. of P_2O_5 and K_2O, and tests of succeeding years received 120 lb. Nitrogen went on at rates of 60, 120, and 240 lb. an acre. Half the corn was irrigated when

25% of plants wilted by the middle of May.

In the report it was noted that irrigation was most effective in increasing yields during the period from late pre-tasseling to early roasting ear growth—the increase running from 15.5 to 58.2%; within given plant population, grain protein content increased with amount of applied nitrogen increase; the shelling percentage of corn was not affected by nitrogen supply, plant population or irrigation; at any given level of nitrogen, ear counts increased as plant population increased, regardless of irrigation, and at Experiment, regardless of irrigation, yields increased as nitrogen supply increased.

★

Controls of insects and diseases that affect Georgia pine trees were listed by Nelson Brightwell, extension forester.

The measures are those which are being recommended to timber growers in the area. Some of the insects listed include Ips beetle and black turpentine beetle.

Mr. Brightwell said the black turpentine beetle, which is one of the most common insects that injures trees in south Georgia, usually attacks the trees from the base to about head high. For control measure, he listed spraying the infested portion of the trunk with benzene hexachloride mixed with No. 2 fuel oil. He said if the tree to be treated is on a lawn, it is better to mix the chemical with water because oil is injurious to lawn grass and shrubs.

Another insect prevalent in south Georgia is the Ips beetle, which is found in three species ranging in size from ⅛ to ¼ in. These attack tops of trees and trunks as well. Here it is best to remove the tree and then spray the tree that is cut down with BHC to kill insects present and prevent attacks on other trees.

Mr. Brightwell mentioned Fusiform Canker as a disease which injures loblolly and slash pines in this southern area. The canker causes swelling on the branches or trunk. The forester said that there is no chemical control for this disease, so the infected limbs might be pruned to prevent the infection from spreading into the main trunk of the tree.

Brown spot needle blight, found on long leaf pine seedlings and occasionally on large pines of other species, may cause some growth to be lost, but the disease does no serious harm, the forester pointed out. He said the needles will come out again after old ones fall.

Mr. Brightwell advised farmers to keep their trees in a healthy condition as the best protection against insects and diseases. A main factor in such measures is thinning the timberland to keep the trees from becoming too crowded. He pointed out that pines in a crowded condition are likely to be weaker and more susceptible to disease.

★

"Reduction in output, which is not a'ways apparent, is by far the greatest loss to the production phase of agriculture," says Dr. Wayne G. McCully of the range and forestry department of Texas A&M. He said that injurious plants, such as shinnery oak, increase labor and may lower the quality of the marketed commodity.

Vegetation control is the establishment and maintenance of a particular kind of vegetation on a given area. Land managers have long used the practice of intensive cultivation with a planted crop as a means of vegetation control, he added.

The recent development of selective phytocides has furnished tools to use in vegetation control over large areas of non-cultivated range and timberlands. Aerial applicators are important in the development and use of these new tools in agriculture, he said.

Dr. McCully pointed out that the concept of vegetation control implies that some plants are more desirable than others in furnishing a monetary return to the farmer, rancher or forester. These undesirable plants have long been known as weeds or brush. Management programs have been directed toward minimizing or overcoming their effects on the production of desirable plants.

★

Experimental plots of grain sorghum in Fannin, Grayson and Collin counties in Texas seem to prove that nitrogen fertilizer will increase the profits.

On some plots where 80 lb. of nitrogen were used, the yield was 6,000 lb. an acre. Plots with 40 lb. of nitrogen an acre gave a yield of about 335 lb. less grain.

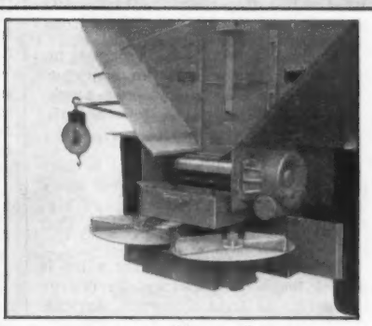
These tests seem to prove that farmers can use nitrogen profitably, according to C. O. Spence, extension agronomist. Phosphorus was also used on some of the tests, but did not seem to be as essential as nitrogen, according to Mr. Spence.

Covers the Field with Lime or Pelletized Fertilizer in Half the Time!

- **Cuts in-the-field operating costs, time on the job and soil compaction at least 50%! Some owners cover an acre a minute!**
- **Means more jobs each day, more profit per job, greater customer satisfaction!**

Here's a rig built specially for heavy-duty spreading! A big 25 h.p. auxiliary engine drives the large 24″ twin spinners to deliver uniform, very wide applications. The sealed gear cases for the spinners are oversize with larger gears and shafting for trouble-free operation under heavy loads. The 24″ all-steel, riveted, roller-type conveyor chain is driven by the PTO through heat treated gears in a sealed, aluminum gear case. A drive shaft drive, with cab-controls, is available and synchronizes conveyor speed and truck speed to eliminate spreading skip in slippery fields. The heavily reinforced body of the L-52S, 45° angle sides, and 24″ wide conveyor eliminate bridging and permits a lower center of gravity. Capacities range from 6 to 10½ cubic yards for bigger pay-loads.

The L-62S engine driven combination spreader, with a 30″ conveyor and larger capacities, is recommended for *extremely* heavy applications.



This Exclusive NEW LEADER Metering Device Accurately Meters from 100 lbs. per Acre and Up!

The test box slides into position above the spinners. The feedgate is set—the spreader driven 50 ft.—the material coming off the conveyor into the test box is weighed—and calibrated in pounds per acre on the scale dial. Takes the guess work out of spreading . . . and more accurate spreading means more business! Be sure to order this attachment with your rig.

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ARIZ.—Win Ward Co., Pomona (Cal.)
ARK.—Truck Equip. Co., Fort Smith and Springdale
Southern Equip. Co., Little Rock and El Dorado
CAL.—Lakeside Truck Body Co., Turlock and Pomona
CONN.—Equip. Service, Inc., Hartford
COLO.—Madron Mfg. Co., Inc., Denver
DEL.—Bohr Spreader Service, Inc., Harrington
FLA.—Conibear Equip. Co., Lakeland
Rivers Body Factory, Inc., Jacksonville
G. C. Phillips Tractor Co., Inc., Birmingham and Prichard (Ala.)
GA.—Brooker Truck Equip. Co., Atlanta
IDA.—Oscar Bennion, Salt Lake City (Utah)
ILL.—D. H. Thomas & Son, Inc., Rockford
Koste Machinery Co., Inc., Hazelwood (Mo.)
Truck Equip. Co., Peoria
IND.—Emmert Trailer Corp., Elkhart
Borg & Browning Imp. Sales, Richmond
Delphi Body Works, Inc., Delphi
South Side Equip. Co., Inc., Indianapolis
Mulzer Brothers, Tell City
IA.—Badger Body Mfg. Co., Omaha (Neb.)
Wendler-Kraus Equip. Co., Inc., Cedar Rapids
KAN.—Perfection Truck Equip. Co., Wichita
Perfection Spring & Equip. Co., Kansas City (Mo.)
KY.—J. Edinger & Son, Louisville
Mulzer Brothers, Tell City (Ind.)
LA.—Dealers Truck Equip. Co., Inc., Shreveport and Baton Rouge
A. P. Lindsey, Dist., Inc., Jackson (Miss.)
MD.—Bohr Spreader Service, Inc., Harrington (Del.)
MASS.—Heil Equip. Co. of Boston, Brighton
Equip. Service, Inc., Hartford
MICH.—Goes Seed & Equip Co., Saginaw
Emmert Trailer Corp., Elkhart (Ind.)
Ostrom-Johnson Co., Rice Lake (Wis.)
Geo. Briggs Ford Co., Defiance (Ohio)
MINN.—Power Brake & Equip., Inc., St. Paul and Duluth
MO.—Koste Mach. Co., Inc., Hazelwood
Perfection Spring & Equip. Co., Kansas City
MONT.—H-C-L Equip., Inc., Billings and Great Falls
NEB.—Badger Body Mfg. Co., Omaha
NEV.—Lovelock Welding, Lovelock
Win Ward Co., Pomona (Cal.)
N.H.—Heil Equip. Co. of Boston, Brighton (Mass.)
N.J.—Bohr Spreader Service, Inc., Harrington (Del.)
N.M.—P & R Truck Equip. Co., El Paso (Tex.)
N.Y.—H. O. Penn Mach. Co., Inc., Poughkeepsie
N.C.—O. H. Stanard, Raleigh
OHIO—Heisler's, Inc., Willard
D. L. Phillips, Damascus
Geo. Briggs Ford Co., Defiance
Schodorf Truck Body & Equip. Co., Columbus
Burg & Brown Imp. Sales, Richmond (Ind.)
OKLA.—Truck Equip. Co., Fort Smith (Ark.) and Springdale (Ark.)
Southern Equip. Co., Little Rock (Ark.) and El Dorado (Ark.)
ORE.—Oscar Bennion, Salt Lake City (Utah)
PA.—Annville Body Co., Annville
Ira D. Haines, Waynesburg
D. L. Phillips, Damascus (Ohio)
R.I.—Heil Equip. Co. of Boston, Brighton (Mass.)
S.C.—O. H. Stanard, Raleigh (N.C.)
Brooker Truck Equip. Co., Atlanta (Ga.)
TENN.—Tennessee Dist. Co., Donelson
TEX.—Ace Dist. Co., Houston
P & R Truck Equip. Co., El Paso
Dealers Truck Equip. Co., Inc., Shreveport (La.) and Baton Rouge (La.)
UTAH—Oscar Bennion, Salt Lake City
Highway Motors, Inc., Harrisburg
VA.—Bohr Spreader Service, Inc., Harrington (Del.)
W. VA.—Farmers' Truck & Imp. Co., Buckhannon
D. L. Phillips, Damascus (Ohio)
WIS.—Brooks Industrial Sales, Inc., Sun Prairie
Ostrom-Johnson Co., Rice Lake
WYO.—Oscar Bennion, Salt Lake City (Utah)

Write for illustrated bulletins

HIGHWAY EQUIPMENT COMPANY
682 D. Ave. N. W. Cedar Rapids, Iowa
Our Business is S-P-R-E-A-D-I-N-G-!

NEW LEADER
SALES & SERVICE

MOTTO

(Continued from page 9)

a 1,200 ton capacity is provided. The ingredients — nitrogen, phosphate, potash and 9-36-0—are purchased separately and stored in individual bins. The materials are then mixed, about 25% of the total being in special blends. The 9-36-0 formula is basic in all mixes.

The routine in blending goes like this. The materials are first picked up in their individual bins, using the tractor shovel loader, and dumped into the floor hopper. From the hopper they are elevated to overhead holding bins. When ready to mix they are weighed into the scale hopper, from which they run into the mixer below. The mix is then re-elevated into holding bins from which it is loaded into trucks.

The mixing and spreading operations are carried out simultaneously. Leaving mixed materials in the bins for any length of time is avoided, to eliminate caking.

Heptachlor for use in controlling corn root insects is added when wanted.

When orders for spreading come in they are entered on spreading order forms. These forms contain all necessary information, and a copy is taken by the spreader operator as he goes to the farm.

One thousand tons of bagged material is handled and delivered to farmers. Much of this material is used in hill drop planter attachments. Storage capacity for bags is 300 tons.

Bagged fertilizer is shipped in by rail and truck, the supplier granting a storage discount averaging $2 a ton for a four month period beginning in October.

Much of the bulk material is shipped in by rail, and the storage space is kept filled at all times. Bulk material is $4 a ton cheaper than that in bags.

Tied in with the fertilizer sales is a soil testing laboratory. In charge of testing is Lyle Syverson, agricultural college agronomy graduate with special training in soils.

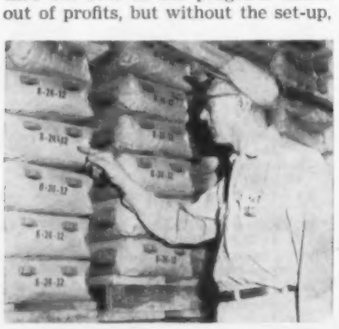
"We test an average of 2,000 samples a year," Mr. Syverson says. Testing for customers is for free, others paying $1.50 a sample for the service.

The popularity of soil testing is growing with about 70% of the customers using the service. Farmers who use the tests, according to Mr. Raddatz, ordinarily apply larger amounts, which of course leads to larger sales.

"The test can be no better than the sample," says Mr. Syverson, who helps farmers with sampling when time permits.

A "must" in the firm's program is "test the soil before applying fertilizer," says Mr. Raddatz.

The laboratory makes little if any profit. The time factor is an advantage, however, since tests can be completed in four days. It is true that the cost of the program comes out of profits, but without the set-up, testing would be done elsewhere at the expense of the dealer.



RICHARD RADDATZ is the manager of the Redwood County Farm Bureau Service Co. in Wabasso, Minn. The firm sells over 3,000 tons of fertilizer annually.

A second advantage derived from the testing program is increased sales. Without the testing service the fertilizer business would go to competitors who do make tests.

To illustrate, a farmer comes in with several samples for test. After furnishing the necessary information regarding acreage, and other data he left, leaving this message, "send the fertilizer out when you know what the test is." The agronomist then works out the formula, and tonnage needed.

Test reports include information relating to content of organic matter, P, K, Ph test and texture. "We try to sell the farmer on having tests made," says the manager, "and show him how it will make money for him."

An up-to-date supply of equipment is maintained. It includes a Beckman direct reading flame photometer, a Beckman Ph meter, a Bausch and Lomb colorimeter, a Beckel drying oven, an Eberbach shaker, and a Rayette analytical balancer.

The pricing program on fertilizer is based on a 10% mark up. This provides a 2-3% net profit. Storage discounts are granted on a progressive basis, beginning with $2.50 per ton in October and decreasing until the end of March, when discounts are discontinued.

A 2% discount is also made to customers who pay cash within 10 days, (about 60% of the customers taking advantage of this privilege.)

A credit policy is in effect, says Mr. Raddatz. "If we went on a cash basis we would lose half of our sales. farmers just don't have the ready cash at all times."

The policy is to extend credit up to 120 days after which 6% interest is charged. Some of this debt is then carried by the company, arrangements for the rest being made elsewhere.

"To tell if a man's credit is good, we check with the credit bureau, and if we find any poor risks, we close down on their credit, or make other arrangements."

Closing out poor accounts results in no loss to the business, and credit losses are few. "If a man has a good credit rating and runs into hard luck, we meet him half way. We go along with customers who keep us informed of their financial situation. Most farmers keep accounts and know what they can afford."

Monthly statements are mailed and are welcomed by the majority of customers. On slow payers, personal contacts have helped, Mr. Raddatz says.

Regarding young farmers, Mr. Raddatz believes in helping many of them in getting a start. This policy helps hold their business.

Radio and newspaper advertising are both important with an annual expenditure of $1,800 being made in these programs. Contests are also held at an annual cost of $500.

Two contests have been held. In one of these numbered tickets were included in bags of fertilizer, and prizes given to lucky contestants. In the other, prizes were given to spreader truck operators applying the greatest amount of fertilizer. The aim here is to encourage operators in doing a selling job.

In addition to contests, four meetings a year are held, two on fertilizer, and two on feed. Experts assist at these events. The meetings are well attended and "keep our name before the public," the manager says.

Two changes are coming up in the future, first an increase in fall applications, and second a reduction in the amount of side dressing done.

In closing Mr. Raddatz made two statements, first, "We must let the customer know what we have and then give it to him," and second, "we treat our nickel and dime customers in the same way we do our thousand dollar ones."

NATIONAL PLANT FOOD INSTITUTE fertilizer economics study being discussed at the Davis Campus of the University of California. Left to right are: Dr. Chester McCorkle, associate professor of agricultural economics, who is supervising the study; Dr. Richard B. Bahme, western regional director for NPFI; Drs. Harold Carter and Gerald Dean, agricultural economics instructors actively engaged in the project, and Gordon Fisher, agricultural economics senior assisting on the study.

NPFI Studies Economics of Fertilizer in California

SAN FRANCISCO — A National Plant Food Institute sponsored study of the economic benefits of fertilizing certain important California crops should turn up some valuable information to be made available to farmers and others within the next year, according to Dr. Richard B. Bahme, western regional director of NPFI.

"The $2,500 grant-in-aid is being put to work at the Davis Campus of the University of California under the supervision of Dr. Chester McCorkle, associate professor of agricultural economics," Dr. Bahme said. Drs. Gerald Dean and Harold Carter, instructors in the department, are now busy digging out useful research on crop fertilization which they will analyze with the assistance of Gordon Fisher, senior student in agricultural economics.

"University crop departments, such as the field, vegetable, berry and vine, fruit and nut, and forage crop groups have assured their full cooperation to this research team, and this should facilitate the success of the economic evaluation," he added.

"Information developed from the one-year study is to be published in a circular which will tell farmers about the benefits of proper fertilizer usage and will indicate maximum yields and profits," Dr. Bahme continued.

He also said that it was proposed that a research paper emphasizing the importance of proper planning and design of fertilization experiments would be published in the University of California publication, "Hilgardia." It is hoped that this will bring to agricultural scientists a better realization of the significance of developing information which may be analyzed from the standpoint of economics. These reports are expected by the end of the current year.

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

Remember the familiar claim that fertilizer is always one of the first products the farmer quits buying when production costs rise? No doubt this was true a few years ago but is the situation changing? Maybe so. Here's what J. W. Freeman, county agent in Nansemond County, Virginia, and president of that state's county agent association, has to say about this subject:

"Many of us a few years ago predicted that fertilizer would be the first item in the farmer's production budget to 'get the ax' when times got tight. Well, times have been tight for quite a while and the cost-price squeeze has been such as to put the prediction to a test.

"Although there was a decline of 31,000 tons in fertilizer consumption in Virginia in 1958, only a small part of that decline can be attributed to indiscriminate budget-cutting by the farmer, or to reduced rates of application, in my judgment.

"Most of the decline resulted from adjustments in crop and pasture acreages where enterprises were shifted; to urbanization-industrialization, and more important, to the late Acreage Reserve and the current Conservation Reserve of the Soil Bank.

"Based on personal contacts—meetings, farm visits, office and telephone calls, and a continuing increase in soil samples tested, I believe that the amount of plant food used per acre in 1958 was as high as ever.

"There's an awareness on the part of our better farmers to the major economic and technical considerations of plant food use. These individuals are relating the needs of a crop to the soil in which it's to be grown.

"There are ways to cut corners in many production and harvesting items and practices, but there's little room to stint very much on plant food, and the better growers are fully conscious of it.

"Two main factors are perhaps responsible for this awareness. The cost-price squeeze is one, of course. A farmer just has to grow things cheaper per unit. Another is the knowledge that plant food users have advanced very little as compared with the phenomenal increases in many other productions, harvesting, and marketing costs over the past 10 or 15 years."

But Mr. Freeman sees another important reason—"One that perhaps we sometimes take for granted. It is the cooperation and exchange of ideas at local and state levels, between the plant food industry, agricultural educational agencies and organizations, and individual farmers and farm groups.

"Farmers and farm leaders recognize a common ground of mutual understanding and confidence, of the interdependence of one on the other. Surely, that is the soundest and broadest base on which any industry servicing agriculture can rest," Mr. Freeman concludes.

The Week in WASHINGTON

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON — Congress has been unable to formulate any consolidated policy on wheat price supports for the coming crop year.

The House Subcommittee on Wheat Legislation has approved a measure which would retain the basic acreage allotment for the national wheat crop at 55 million acres. This proposal would cut back the 15 acre exemption of the soft red wheat belt to 12 acres and would switch penalties for overproduction in other areas from a normal yield to actual yield basis.

This measure has the politically attractive features of 90% parity support and of maintaining the 55 million acre wheat base.

The Senate also is considering wheat legislation, but its Agriculture Committee is badly split.

At one point, the high price support group in the Senate Committee favored a bill giving stepped-up price supports as farmers reduced their acreages. However, this proposal has been dropped, and the best the Senate Committee has been able to come up with is a resolution calling for delay until June 1 of the deadline for announcing wheat price supports and acreage allotments.

There is great doubt that any major farm legislation will be adopted this crop year. Wheat farmers, working within a 55 million acreage allotment, will go all-out to gain maximum production. The way the wheat legislation now shapes up there will be, weather permitting, another huge crop.

None of the measures now being offered would prevent planting of other crops on any land taken out of wheat. This means that Congress will do nothing to reduce acreage of all crops for 1959.

Program for TVA Demonstrations Set For June 9-11 Meeting

MUSCLE SHOALS, ALA. — The Tennessee Valley Authority has announced the schedule for its pilot-plant demonstration of fertilizer technology June 9-11 at the fertilizer-munitions development center, Muscle Shoals, Ala.

The schedule follows:

June 9: Registration, general meeting and discussions of ammoniation granulation, and nitrogen loss, and demonstration of the production of 12-12-12 in the continuous ammoniator and apparatus for estimation of nitrous oxides in effluent gas.

The program for June 10 includes a discussion of production of high-nitrogen grades, demonstration of the use of TVA-produced 30-10-0 in the production of 20-10-0 granular fertilizer, discussion of the production of granular no-nitrogen grades, and a demonstration of the production of 0-25-25 using the phosphate rock-phosphoric acid reaction to promote granulation.

The final day, June 11, will feature a liquid fertilizer conference. Talks and discussions on status of technology and recent developments will be held.

Demonstrations on the production of 0-23-23 liquid fertilizer from caustic potash and superphosphoric acid, production of 8-24-0 liquid fertilizer from wet-process phosphoric acid by sequestering impurities with 11-33-0 made from superphosphoric acid and pumping and spraying of suspension fertilizers will be on the agenda.

Exhibits of various grades of liquid and suspension fertilizers are also on the agenda.

Members of the fertilizer industry and other interested persons are invited to attend the demonstration. Those planning to do so are requested to notify J. H. Walthall, Director of Chemical Development, Tennessee Valley Authority, Wilson Dam, Ala.

Fire, Explosions Damage Kentucky Plant

MAYSVILLE, KY.—Fire and five explosions combined on May 11 to cause loss estimated at $250,000 in the Ohio Valley Fertilizer Corp., one mile east of this Ohio River city. The five blasts occurred in tankage receptacles in the plant, which processed tobacco fertilizer. Built in 1952, the plant was operated by Gilbert Nooe.

Monsanto Modernizes Tennessee Plant

ST. LOUIS — Monsanto Chemical Co.'s inorganic chemicals division has begun construction which involves extensive modernization of its elemental phosphorus plant at Columbia, Tenn., Edward J. Bock, division assistant general manager, announced.

Construction now underway at the Tennessee location is part of a long range program of expansion for the plant. The initial work includes installation of facilities for the prevention of air and stream pollution, as well as other facilities for the preparation and processing of phosphate rock into elemental phosphorus. This initial phase is expected to be completed in about eight months, Mr. Bock said.

Engineering and design work for the improvements have been done by Monsanto staff personnel, Mr. Bock pointed out, and local contractors are being awarded contracts for the actual construction where feasible.

Calspray Names District Agronomist, Two Salesmen

RICHMOND, CAL. — Raymond C. French and Earl A. Reitsma have been named to California Spray-Chemical Corp. sales posts in Washington and James C. Holliday district agronomist, the company announced.

Mr. French, who will headquarter at the firm's Wenatchee, Wash., office, was formerly associated with the Washington State Extension Service.

Mr. Reitsma will also use the Wenatchee location as headquarters. He was previously a fieldman and later in agricultural research with Libby, McNeill & Libby.

Mr. Holliday, who has been with Calspray for three years, was assigned to the district office in Sacramento. He was formerly a Calspray sales representative in North Carolina.

Chase Bag Manager Heart Attack Victim

CHAGRIN FALLS, OHIO—Robert D. Rusch, 51, manager of the Chase Bag Co. paper mill here, died of a heart attack on May 6 at his home, the company announced. Under the direction of Mr. Rusch, an expansion program was under way at the Chase mill where he had been manager since March, 1957. He spent his entire business life in the paper industry, having been previously with the Mosinee Paper Co. in Mosinee, Wis., International Paper Co. in Ticonderoga, N.Y., and the Kimberly-Clark Corp. He held a Master's degree from the Institute of Paper Chemistry, was a member of several professional organizations and a graduate of Lawrence College, Appleton, Wis.

Three Fertilizer Authorizations Issued To Korea by ICA

WASHINGTON—The International Cooperation Administration has issued three fertilizer authorizations to Korea. The largest is $2,450,000 for nitrogenous fertilizers, with the contracting period ending Sept. 30, 1959, and the terminal delivery date being Dec. 31, 1959.

A second authorization, amounting to $2.1 million, with same contracting period and terminal delivery date, is for phosphate fertilizer.

The third authorization is for nitrogenous fertilizers amounting to $500,000, with the contract period ending June 30 and the terminal delivery date Sept. 30.

Gibberellic Acid Use on Lemons Tested in California

BERKELEY, CAL. — Gibberellic acid may become useful in increasing the proportion of desirable storage lemons and in prolonging their storage life.

This possible use for the growth-promoting chemical is suggested by experiments at the University of California, Riverside.

Gibberellin-treated lemons colored more slowly and stored longer than lemons from untreated trees, reports Charles W. Coggins, assistant plant physiologist. But the buttons of the fruit tended to loosen and fall off sooner. Other undesirable effects on the tree were also noted.

The fact that yellow color formation in the rind is suppressed probably means that fruit could be held on trees longer, says Mr. Coggins.

If the undesirable side effects can be overcome, such use of the acid may ultimately provide consumers with a better-quality, fresher lemon, at the same time reducing growers' picking operations and costs, the Citrus Experiment Station scientist believes.

Growers Petition for Herbicide Hearings

LANSING, MICH.—Two petitions have been received by the State Agriculture Department from grape growers requesting hearings to establish certain districts in four counties as areas where specific weed killers might be restricted. The petitions were received from growers in Berrien, Van Buren, Cass and Kalamazoo counties. The three herbicides mentioned were 2,4-D, 2,4,5-T and MCP.

A recently-enacted Michigan law allows grape growers to file such petitions. Under the new act a public hearing must be held by the agriculture director to take testimony for or against the proposal. No date has been set as yet for the hearing.

Olin Mathieson Sales, Profits Up Substantially

EAST AFTON, ILL.—Sales of Olin Mathieson Chemical Corp. in the U.S. and Canada increased 25% and net profits rose 43% in the first quarter of 1959, compared with the same period in 1958.

At the annual shareholders' meeting held here, Thomas S. Nichols, chairman, and Stanley de J. Osborne, president, reported that net sales and operating revenues in the first quarter of this year were $159,909,000, compared with $127,625,000 in the first three months of 1958.

Net profits totaled $6,395,000, or 48¢ per share, in this year's quarter, compared with net profits of $4,473,000, or 33¢ per share, after non-recurring charges, in the first quarter of 1958. The gain in net profits resulted in spite of continuing losses of the corporation's new aluminum rolling mill at Omal, Ohio.

AGRICULTURAL FIELD DAY

AMES, IOWA—The annual Iowa State College agricultural engineering field day will be held at Ames on June 12.

Reader Views

To the Editor:

"Looks like you are going to have another interesting series in Croplife. I am referring to your series of novel methods of insect control. I am looking forward to seeing future issues. When I saw this one, I recalled an old issue of 'Lawn Care' . . . This issue featured a story sent in by a customer. It had to do with their dog who faithfully roamed their lawn and with his mouth picked every dandelion blossom that appeared.

"Of course, this is not a patent and not exactly in line with what you are doing, but I could not help thinking of it."

Harold C. Doellinger
Scotts'
Marysville, Ohio

S. R. Clement Named New Monsanto Sales Director

ST. LOUIS—S. R. Clement, St. Louis, formerly director of sales—agricultural chemicals for Monsanto Chemical Co.'s inorganic chemicals division, has been appointed to the newly created position of director of sales in charge of customer relations, J. L. Christian, a Monsanto vice president and division general manager, announced.

Mr. Clement's headquarters will remain in St. Louis.

At the same time J. E. Crawford, Jr., director of marketing for the division, announced promotions of three St. Louis members of the marketing group as a result of Mr. Clement's appointment. Dr. P. G. Arvan, formerly director of sales—technical service, replaces Mr. Clement, and Dr. Louis Fernandez, formerly product sales manager—phosphates, takes Dr. Arvan's place. A. Q. Svoboda, formerly supervisor—industrial phosphates, has been named to succeed Dr. Fernandez.

OPERATOR DIES

DES MOINES, IOWA — Orval L. Dennis, 62, of Davenport, Iowa, operator of the Dennis Exterminating Co. in Davenport and a past president of the Pest Control Association of Iowa, died May 1 at the Veterans hospital here. Death was due to a heart ailment.

Important Message about GRANULAR HERBICIDES

Diamond granular* 2,4-D herbicides are manufactured in two forms and sold under our CROP RIDER label:

1. For application in farm ponds, lakes, irrigation ditches and drainage ditches.
2. For ground application, using any satisfactory type of spreaders . . . an ideal method, since it avoids risk of spray drift.

Newer developments have shown that granular applications of 2,4-D and other hormone-like herbicides have considerable promise for weed control. We would like to discuss these with you. DIAMOND ALKALI COMPANY, 300 Union Commerce Building, Cleveland 14, Ohio.

*Manufactured under U. S. Patent 2,792,295

Diamond Chemicals

Carl D. Fischer

APPOINTMENT of Carl D. Fischer as southwestern regional sales manager of Crag Agricultural Chemicals has been announced by Union Carbide Chemicals Co., Division of Union Carbide Corp. With headquarters at Phoenix, Mr. Fischer will be responsible for marketing activity throughout Arizona, New Mexico, West Texas and Colorado. He will concentrate on sales of Carbide's Sevin insecticide. Mr. Fischer formerly was stationed with the Crag Agricultural Chemicals sales group at White Plains, N.Y., and has had industrial chemical sales experience with Carbide. Prior to joining the company, he was a Carbide fellow at Mellon Institute of Industrial Research, Pittsburgh.

North Carolina County Launches Test Drive

COLUMBUS, N.C.—A drive, with which officials hope to test the soil of every lawn, garden and farm in the southwestern North Carolina extension district, was launched in Polk County recently.

Donald R. Jones, county commissioner, gave the program a send-off by taking a sample from the Polk County courthouse lawn.

All agricultural, civic, vocational, 4-H and garden clubs are participating in the Polk drive.

Upwards of 3,000 soil samples were expected to be collected. In the entire 17-county district, several hundred thousand samples will be taken.

The tests are made to determine the acid and plant nutrient status of the soil. Knowing this, proper amounts of fertilizer and lime can be added for maximum growth.

Blanket soil testing was tried in Hoke County last year. A $2 million increase in agricultural income that followed was attributed to the testing program.

Blanket soil testing could increase Piedmont farm income $50 million, according to farm experts.

P. E. Culbertson, Polk County farm agent, is leading the Polk drive.

Dyrene Registered For Use on Celery

PITTSBURGH — Dyrene, an organic fungicide manufactured by Chemagro Corp., has been registered by the U.S. Department of Agriculture for use on celery. It had previously been registered for use on tomatoes and potatoes.

Results of six years of research and field testing show that Dyrene is effective in controlling Rhizoctonia, late blight, and early blight on commercial varieties of celery, the company said. As a fungus control on tomatoes, Dyrene is effective against such diseases as early and late blight, Anthracnose, Septoria leaf spot, gray leaf spot and Botrytis, according to the firm. It controls early and late blight on potatoes.

FERTILIZER SAVES FOOD BILLS

MEMPHIS—The Memphis Agricultural Club was told that the use of commercial fertilizers in farming saves the public $13 billion a year on food bills.

Dr. Samuel L. Tisdale, Atlanta, Southeastern regional director of the National Plant Food Institute, said, "Food would cost that much more to grow if farmers raised crops by old methods."

"Are we trying to add to the surplus problem?", he asked. "Not at all. We are merely trying to improve farm income and bring about greater efficiency. In the face of reduced acreage allotments, this is a good business practice."

Southeastern U.S. Seen as Possible Sulfur-Deficient Area

BLACKSBURG, VA. — The southeastern U.S. was tabbed as potentially sulfur-deficient because its soils are highly weathered and there is only minor industrial activity to contribute sulfur to the atmosphere.

This factor was brought out in a study done by personnel of the U.S. Department of Agriculture and agricultural experiment stations in the states concerned. The study showed that crop production had been sustained in the past, to a considerable extent, by sulfur supplied incidentally in fertilizers. With the present trend toward use of fertilizers low in sulfur, sulfur deficiency might be expected to occur.

Rainwater for the three-year study was collected at 109 locations in 12 states. In Kentucky, Tennessee, and Virginia, sulfur accretions in rainwater were found to be higher than in the nine other southern states. The reason may have been a greater use of coal for industrial and heating purposes in those three states. The principal source of sulfur in atmosphere and precipitation is believed to be the discharge of combustion gases from burning coal and wood. Near seacoasts, sulfur is probably carried inland as spray. Decomposing organic matter gives off hydrogen sulfide. This atmospheric sulfur is periodically carried to the earth in rainwater, and is added to the soil.

J. A. Lutz, research agronomist at Virginia Polytechnic Institute, explained that crops commonly grown in the southeast, such as clover, alfalfa and cotton, need from 15 to 25 lb. of sulfur an acre for normal production. Certain vegetable crops need even more. Corn and grasses need 10 lb. an acre or less.

In Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North and South Carolina, and Texas, the general average accretion of sulfur in rainwater for the three years studied was 5.4 lb. an acre. In Virginia, the average was over 14 lb. for the three years. Highest sulfur accretion was noted at Norfolk, with an annual average of 31.4 lb. Also high were Charlotte Court House and Staunton, with 19.4 lb. each, and Middleburg, with 19 lb., Mr. Lutz said.

New Arkansas Firm

LITTLE ROCK, ARK.—Miller Feed Co. of Marianna, Ark., has filed articles of incorporation with C. G. Hall, secretary of state, here to operate a feed, seed, fertilizer and insecticide business.

The corporation listed 4,000 shares of authorized $25 par value stock. Incorporators were Glenn U. Miller, Paul Woodware, Murill Webster and Jeanette McCollum of Marianna.

SPRAY BULLETIN

BLACKSBURG, VA.—Now available from county agricultural agents and Virginia Polytechnic Institute or the Agricultural Extension Service, Blacksburg, is Bulletin 131 (Revised) "1959 Virginia Spray Bulletin," which provides commercial growers with information on use of sprays to control diseases and insects in orchards. Recommendations are based on research conducted at Winchester, Charlottesville and Blacksburg.

Olin Mathieson Changes Insecticide Department

NEW YORK—Olin Mathieson Chemical Corp. has announced a realignment of its insecticide products department.

Centered around the production of basic chemicals, the new program will include the manufacture of technical DDT, DDT compositions, technical Terraclor, Terraclor fungicide compositions, Phytomycin (20% Streptomycin solution), BHC technical, BHC compositions and Omazene fungicide.

K. B. Nash and A. E. Collazo were appointed assistant managers. Mr. Nash, formerly in charge of the insecticide market development program, will be concerned with sales effort and technical sales work. Mr. Collazo, who had been pesticide manager, International Chemicals Division, will handle government insecticide business and matters pertaining to overseas trade. Both will report directly to G. D. Baerman, manager of the department. The move also sends E. G. Hartzfeld, former technical service representative, to Dallas, Texas, as sales representative for the Southwest.

In another shift, H. O. Manning, previously attached to the order department, becomes manager, customer service, replacing D. M. Malcolm. Mr. Malcolm has transferred to the nitrogen products department.

Spencer Sales Show Gain in Quarter

KANSAS CITY, MO.—The seasonal increase in fertilizer demand together with further expansion in polyethylene provided Spencer Chemical Co. with an increase in sales for the three months ended March 31 compared with the corresponding 1958 period.

Higher volumes in all product divisions resulted in greater net profits for the quarter, and also helped the 9-month cumulative results, Kenneth A. Spencer, president, said.

The generally favorable agricultural situation in the areas served by the company permitted a good spring shipment of nitrogen products. Although seasonally higher prices were in effect during the quarter the price level was below a year ago, Mr. Spencer said.

In the three months ended March 31 net sales were $12,489,063, compared with $9 465,136 in the like 1958 period. For the nine months, sales aggregated $36,367,640, against $30,659,765. Net income for the three months to March 31 was $854 576, equal to 64 cents a common share, after preferred dividends, compared with $613,726, or 42 cents a share, a year before. For the nine months, net income of $2,228,585 was equal to $1.62 a common share, compared with $2,191,807, or $1.58 a share, last year.

BENTONITE BULLETIN

FT. COLLINS, COLO.—Latest information on using bentonite to seal sandy irrigation ditches is available in a new circular published by Colorado State University. The circular, first in a series of five publications dealing with the bentonite sealing method, is Circular 202-A, "Sealing Sandy Ditches with the Bentonite Dispersion Method." It can be obtained at county extension service offices or from Bulletin Room, Colorado State University, Ft. Collins.

University of California Receives $140,000 in Grants

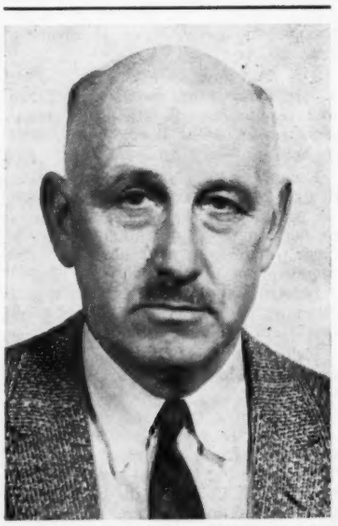
BERKELEY, CAL.—Several agencies of the U.S. government together with private firms and industrial associations have strengthened the research fund of the division of agricultural sciences of the University of California. In total, approximately $140,000 was received last month by the University to promote various research studies in fields relating to agricultural chemicals.

The U.S. Public Health Service made the following grants, for the purposes as shown: $22,286.96 for research on carbohydrate metabolism in plants; $7,916 for research on the combination of insecticides with insect tissues and the constituents concerned with the process; $8,243 for research on enzyme activity at interfaces other than air-water; $12,500 for research on the chemistry and mode of action of insecticides; and $6,785 for research on the reproductivity of entomophthorous fungi.

The Atomic Energy Commission gave the University $5,561 for research on the effect of ultraviolet light on enzymes and viruses, and $13,831 for research on the mechanism and kinetics of mineral absorption by plants. The National Science Foundation allocated its first grant of a five year payment to total overall $55,232.20 for research on epidemic diseases among insects.

Other donations were as follows: by the California strawberry advisory board, $2,000 for strawberry research on insect pest investigations with emphasis on cyclamen control; by the Collins Pine Co., $2,000 for bark beetle research; by the Diamond Gardner Corp., $3,761.95 for studies and analysis to eliminate bacterial infestation of ponderosa pine logs and lumber.

The California Beet Growers Assn. gave $1,000 for research on green aphid migration; the California long white potato advisory board made one grant of $4,000 for research on potato greening, and another of $4,000 for blackspot studies; Union Carbide Chemicals Co. gave $8,000 for research on the use of chemicals in foods; the California Spray-Chemical Corp. gave $7,500 for research on the effect of Dibrom and Phosphamidon on plant tissues; and the Leffingwell Chemical Co. gave $400 for investigations on foliar absorption of zinc by grapevines and the zinc nutrition status of California vineyards.



Raymond P. Atherton

HUBBARD-HALL CHEMICAL CO., Waterbury, Conn., has announced the appointment of Raymond P. Atherton, county agricultural agent, to the staff of Hubbard-Hall's agricultural division as agricultural economist, effective July 1, 1959. Mr. Atherton is known to New England farmers and agricultural leaders. In his new position, Mr. Atherton's knowledge of agriculture and farming practices will be made available to northeastern agriculture.

Jeffery W. Meyer

Jeffery Meyer Named Head of California Distribution Firm

SAN FRANCISCO — Jeffery W. Meyer has been named president of Wilson & Geo. Meyer & Co., according to announcement by the firm. He succeeds Wilson Meyer who was made chairman of the board after serving as president since 1928.

The company, in its 110th year, is one of the oldest business firms in San Francisco and one of the West's leading distributors of agricultural and industrial chemicals.

Jeffery Meyer, 35, is a native of San Francisco and holds a degree from the University of California College of Agriculture at Berkeley.

During World War II he served 3½ years in the army and was recalled to active duty in the Korean conflict.

Jeffery Meyer first joined the company in 1948 on graduation from college, serving for three years in the company's Los Angeles office. On his return from Korea in 1952, he joined the San Francisco headquarters staff, engaging in agricultural sales, among other activities, and serving as vice president of the company.

He is the third generation in this company. Previously his grandfather George H. C. Meyer was also head of the firm.

Wilson Meyer has long been identified with leading San Francisco civic and business enterprises as well as directing the activities of the firm.

Wilson & Geo. Meyer & Co. is the direct descendant of the enterprise founded in San Francisco in 1850 by William Meyer, great-uncle of Wilson Meyer, who was a member of the 1851 Vigilance Committee and treasurer of the 1856 Vigilance Committee. At first engaged in importing materials needed for building the West, the firm has, in recent years, engaged in distributing domestic and Norwegian products utilized by Western industries and agriculture.

Among the companies whose products it distributes are Eastman Chemical Products, Inc., chemicals and plastics; Stauffer Chemical Co. and Western Phosphates, Inc., agricultural phosphates; Norsk Hydro of Norway, Norwegian calcium nitrate and urea, and Semet-Solvay coke.

The firm's headquarters are located in San Francisco with district offices in Los Angeles, Portland, Seattle, Salt Lake City and sales offices in Phoenix, El Centro, Fresno, Twin Falls, Denver and Yakima.

QUARTERLY REPORT

SAINT LOUIS, MICH.—Michigan Chemical Corp. reported first quarter net sales of $2,050,562 and net earnings after taxes of $103,010, compared with net sales of $2,782,808 and net earnings of $115,498 in the similar period of 1958. Based on the 735,381 shares outstanding at March 31, earnings a share were 14¢ in 1959 and 16¢ in 1958.

Research in the News

Cotton yields are sometimes reduced by as much as 75% on some southern cotton fields by damage from nematodes.

Nevertheless, Dr. J. M. Good, U.S. Department of Agriculture nematologist at the Georgia Coastal Plain Experiment Station in Tifton, says that much has been discovered about control of plant nematodes through research during the past few years. Tests carried out at the coastal station have shown that seed cotton yields can be lifted as much as 200 lb. on lightly infested land, and as high as 1,400 lb. an acre on heavily infested lands by fumigating the soil with the proper chemicals to control the nematodes.

Dr. Good noted that chemical control of nematodes by fumigation may be carried out by preplanting treatment two weeks before sowing the cotton seed by using D-D, or W-85, or Nemagon, a newly developed product. The chemicals should be applied according to directions, or the user may ask his county agent or nearest experiment station.

Application rates vary in soil fumigants according to varied soil types and conditions. In using liquid or granular form, row fumigation was said to be more practical than the broadcast method for cotton treatment.

Soil fumigation generally controls plant nematodes for only one growing season, so the soil fumigants should be applied every year for best results.

●

Watermelon and cantaloupe growers attending a short course recently at Abraham Baldwin Agricultural College in Georgia received detailed information on all facets of production, including fertilization.

For watermelons the farmers were told that it is best to test soil as a guide to better fertilization. Sandy loam soils were considered best, with high organic content desirable. A pH of 5.0 to 6.0 was said to be good.

Normally, the specialists said, use of 800 to 1,000 lb. of 4-8-6, 5-10-10, or 4-12-12, applied in bands on each side of the rows three in. from the plants and at least that far below the seed was good practice. When the vines are about 2 ft. long, 150 to 200 lb. of 10-0-10 should be used as side dressing.

For cantaloupes the growers were advised to plant on sandy loam soils with a pH of 5.5 to 6.5 if possible, and to use 1,000 lb. of 4-8-8 or 5-10-10 an acre, half of it in the drill before planting, and the other portion as a side dressing after plants start running. If plants needed additional fertilizer, 200 to 300 lb. of 10-0-10 or 300 to 500 lb. of complete fertilizer was recommended.

The growers were told that they might spray vines with 4 lb. of magnesium sulfate and 2 lb. of borax in 100 gal. of water to raise the soluble solids.

●

Research by University of Illinois plant scientists shows that leaf sprays are the best method of overcoming manganese deficiency in crops.

Writing in the spring issue of Illinois Research magazine, R. H. Hageman reports that soybeans in Mason and Lee counties were sprayed with manganese sulfate solutions last year. Except for badly damaged leaves, plants resumed growth and regained normal color within two weeks. Yields were increased at least 6 bu. an acre over untreated areas.

Applying manganese to the soil is not usually successful. Negative results were obtained in greenhouse studies in which soils were brought in from the field. Other states have also found soil treatments ineffective.

Most soils are not actually deficient in manganese, Mr. Hageman points out, but they may have it in a form unavailable to the plant. Readily available forms of manganese can be added to the soil, but it may be rapidly converted to an unavailable form by the soil under certain conditions of low moisture, high temperature, inadequate aeration and alkaline soil reactions.

Plants seem to have a higher requirement for manganese or an inability to absorb adequate amounts under conditions of high moisture, low temperature, and low light intensity. So plants can show deficiency under diverse conditions, Mr. Hageman concludes. University agronomists will continue to study this problem in 1959.

Illinois Research is a new publication of the Illinois Agricultural Experiment Station designed to report the latest farm and home research.

●

Dr. C. E. Jordan, extension entomologist in Georgia, has listed points to be followed in control of cotton insects, and has made such lists available for Georgia farmers.

The points include:

A check of fields for insects once a week to determine when to poison and what to use; selection of an insecticide recommended for the insects to be controlled; adjustment of sprayers and dusters; placement of the correct amount of insecticide per acre under favorable conditions; application of the insecticides at recommended time intervals; if applications were rained on within 24 hours, a report should be made within 48 hours if possible to do so, and continuation of control program long enough to give protection to cotton bolls.

Young Florida 4-H'er Praised for Alertness

LIVE OAK, FLA.—Jimmie Ellis, member of the Live Oak 4-H Club, is the first club member in Florida to send a sample of a suspected screwworm case to eradication headquarters at Sebring.

Jimmie's sample proved to be the larva of another type of blowfly, but, "This type of collecting and reporting is exactly what we planned to stimulate among 4-H Club members," said Drs. M. E. Meadows and D. L. Williams, state and federal leaders of the project.

Agricultural extension service workers agreed with leaders of the screwworm eradication effort last summer to encourage 4-H Club members to watch for and turn over to their county agents samples of suspected screwworm infestations.

Drs. Meadows and Williams expressed the hope that 4-H members will continue to be on the lookout for suspected cases. For his alertness, they sent a plastic embedment of the screwworm life cycle to Jimmie.

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JMTC Names Salesman, Appointed Stauffer Outlet

CHICAGO—Don Ewing, Ft. Wayne, Ind., has been appointed sales and service representative for the states of Indiana and Michigan for J-M Trading Corp., Chicago.

Don Ewing

Mr. Ewing, who was previously engaged in nursery work in Ft. Wayne, is active in the Indiana Nurserymen's Assn. In announcing the appointment, John Mecking, president of JMTC, stated that he is especially qualified to serve the firm's many nursery, garden center, and greenhouse customers in the area.

It was also announced that the firm was appointed by the South Omaha regional sales office of Stauffer Chemical Co. to distribute Stauffer farm and garden chemicals.

Mr. Mecking said that, while Stauffer has manufactured agricultural chemicals since 1885, the Omaha plant has been in operation only four years and midwestern warehouses and distribution were recently established.

Southern States Gird For Pest Control Battles

MEMPHIS—The first scattered insect damage reports of the 1959 farming season have come in from Mississippi. A. G. Bennett, extension entomologist, said that beetles are beginning to stir from the sodded areas and warned farmers to be on the lookout for rough headed stalk beetle damage in young corn.

Mr. Bennett also reported that army worm moths are being caught in light traps and said that farmers should keep a close watch for the army worms in small grain fields. Aphids, cutworms and bean leaf beetles are causing considerable damage in gardens.

Cotton, corn and soybeans are coming up to a stand throughout the Mid-South and re-planting of frost damaged crops is well under way. Extension officials in Mississippi, Arkansas, Tennessee and Missouri report that farmers are generally in good shape for this time of year.

Truett Bufkin, Smith County, Mississippi, county agent, says that most of the corn in his county has been planted and farmers are cultivating that which is up to a good stand. Watermelons and vegetable crops are also being cultivated.

Arkansas extension officials report farmers in east Arkansas are on schedule in soybean and cotton planting. Southeast Arkansas farmers are reported as being slightly later. Rice farmers in the central section of the state also are on schedule with their planting.

H. T. Short, West Tennessee district extension agent, reports farmers are making their first alfalfa cuttings of the season. "Cotton and corn are coming up," he says, "and it looks as though farmers are getting a good stand."

Residual Deposits of New Insecticides Control Malaria Mosquitoes, USDA Says

WASHINGTON—Residual deposits of several new insecticides gave up to 100% control of malaria mosquitoes for 2 to 11 weeks after spray applications on interior surfaces of small farm buildings, U.S. Department of Agriculture scientists reported.

The tests were conducted by James B. Gahan and Robert A. Hoffman of USDA's Agricultural Research Service at Stuttgart, Ark.

Insecticides used were malathion, Diazinon, dicapthon, ronnel (organophosphorus compounds), barthrin, and 2,4-dimethylbenzyl chrysanthemumate (chrysanthemumic compounds). DDT, a chlorinated hydrocarbon, was applied as a standard for comparison.

If further experiments are successful, the compounds may gain widespread use in control of malaria mosquitoes, the scientists said. New insecticides are needed, they indicated, because certain Anopheles mosquitoes have developed resistance to the insecticides now in use.

The scientists said malathion and Diazinon were the most effective insecticides used in the experiments. Malathion controlled nearly all mosquitoes up to 11 weeks after application, but Diazinon had lost much of its toxicity by the seventh week following treatment.

Dicapthon and ronnel were highly effective for at least 2 weeks after application, and partly effective for 4 to 5 weeks. Nearly all mosquitoes were killed during the first 2 weeks after application of barthrin and 2,4-dimethylbenzyl chrysanthemumate, but control percentages decreased rapidly in the third week. In most buildings, DDT, the standard, killed nearly all the mosquitoes until the fifth week, when its toxicity began to decrease rapidly, the scientists said.

When residual deposits of DDT were first used in control of malaria mosquitoes in the South, they continued, insecticide deposits of 200 milligrams per square foot of treated area gave 99% reduction for as long as 4½ months. However, continued use of DDT and other insecticides has resulted in some resistance by malaria mosquitoes in various parts of the world.

Each insecticide used in the recent tests was applied in a water emulsion, using a compression sprayer with an adjustable nozzle. The rate of application provided an insecticide deposit of 200 milligrams per square foot of treated area.

Two New Directors Elected to IMC Board

CHICAGO—Election of two new directors to the board of International Minerals & Chemical Corp. was announced by Louis Ware, IMC board chairman and chief executive officer.

They are Dr. J. W. Dunlap, Stamford, Conn., research scientist and consultant to the U.S. Defense Department on its guided missiles and aircraft program, and Henry W. Meers, Chicago investment banker.

They replace R. Douglas Stuart, board chairman of Quaker Oats Co., and Gen. Robert E. Wood, a director of Sears, Roebuck & Co., both of whom retired under IMC's maximum age provision for directors. They had served on the board since 1945.

Dow Names Manager For International Outlets

MIDLAND, MICH.—Charles M. Doscher, head of chemicals sales for the Dow Chemical Co.'s New York office since 1956, has been promoted to the newly created position of sales manager of chemicals for the Dow international companies, Dow Chemical International Limited, S.A. and Dow Chemical Inter-American Limited.

Frank H. Sellars, of the Dow Atlanta office, has been advanced to succeed Mr. Doscher at New York. Mr. Sellars has headed chemicals sales at Atlanta since 1956.

C. C. Alexander, Geigy Entomologist, Dies

ARDSLEY, N.Y.—Clair C. Alexander, 46, Geigy Chemical Corp. entomologist was killed May 12 in the crash of a commercial airliner near Baltimore, Md., while on a company business trip.

Mr. Alexander, well known throughout the agricultural chemical industry, had been with Geigy for 15 years. He was a native of Ohio and attended Purdue University, Lafayette, Ind., and Ohio State University, Columbus. He held agricultural degrees from both schools.

Survivors include his widow, Isabelle, and daughters Dianne, 13 and Patricia, 7, all of Tarrytown, N.Y., where the Alexanders made their home.

Fleahopper Infestation Reported in Texas

WESLACO, TEXAS — Heavy fleahopper infestation has been reported from most parts of the Lower Rio Grande Valley, according to James A. Deer, associate county agent of Weslaco.

Fleahoppers are early season cotton insects in this area and usually make their annual appearance about this time of year.

There are also some severe infestations of aphids in some areas, while adult boll weevils are being found in widely scattered fields, Mr. Deer said.

In Willacy County red spiders and bollworms continue to cause some damage to cotton fields.

IMC Salesman Dies From Accident Injuries

CHICAGO — Roy Roughton, sales representative for the Potash Division of International Minerals & Chemical Corp., died May 2 of complications resulting from injuries suffered in an auto accident.

The accident occurred April 13 near Milwaukee while Mr. Roughton, who covered the IMC Potash Division's midwest district, was on a sales trip to Wisconsin. He was a resident of Glen Ellyn, Ill.

The midwest district will be covered by IMC Potash Division representatives from other areas on a temporary basis until a permanent replacement is announced, a company spokesman said.

Meeting Dates Set

WINNIPEG, MANITOBA — The joint meeting of the Western Canadian and North Central Weed Control Conferences will be held Dec. 7-10 at the Royal Alexandra Hotel here, announced H. A. Craig, chairman of the general arrangements committee.

South Dakota Fertilizer Meeting Date Set

BROOKINGS, S.D.—A meeting which could determine the growth of the fertilizer industry and speed up the fertilizer education program in South Dakota is being planned here May 25.

A 12-member organizational committee includes Clarence Schladweiler, Madison; Wes Martin, Brookings; Michael Marcour, Sioux Falls; Marlowe Scharf, Watertown; Stephen Jones, Brookings; Ed Schuman and Robert Munson, St. Paul, Minn.; Andy Anderson, Canton; Ole Palmquist, Milbank, and Fred Greene, Leo Puhr and Rodney Dodge, all of Brookings.

If the group decides to organize, they will adopt a constitution and elect a slate of officers at the meeting.

Company's 6 Month Net Equals Entire '58 Profits

LOS ANGELES—United States Borax & Chemical Corp. net income of $2,639,313 for the six months ended March 31, 1959, exceeded profits for the entire 1958 fiscal year, it was reported in the firm's second quarter report to shareholders. U.S. Borax had reported net income of $2,370,314 for the previous fiscal year when earnings were affected by plant start-up expense.

James M. Gerstley, president, said profits for the current six months period were equal, after preferred dividend requirements, to 55¢ a share on the 4,186,825 shares of common stock outstanding. This compared with $601,369, or 7¢ per share on the 4,186,225 shares of common stock outstanding on March 31, 1958.

Sales for the six months ended March 31, 1959, were $29,793,579; sales of $25,344,978 were reported for the same period last year.

Net income for the second quarter, Mr. Gerstley said, amounted to $1,546,065, equivalent to 33¢ a share of common stock, as compared to $743,309, equivalent to 14¢ a share, for the second quarter of the previous year. Record high sales of $15,270,001 were reported for the second quarter as compared to sales to $13,608,625 for the second quarter last year.

Sales of potash from the United States Potash Co. division declined in the second quarter from levels of the comparable period in 1958, Mr. Gerstley said, due to unusually heavy orders in the final months of 1958 when lower prices prevailed.

However, he stated, sales for the six months ended March 31 are ahead of the first half of last year and a better potash season should prevail because of improved agricultural prospects.

Connecticut to Open New Laboratory

NEW HAVEN, CONN. — Edmund W. Sinnott, Sterling, professor emeritus of botany at Yale University, will be one of the principal speakers during ceremonies marking the dedication of Slate Laboratory on June 9. Slate Laboratory, so named in recognition of William L. Slate, director emeritus, is the new building at the Connecticut Agricultural Experiment Station.

Dr. Sinnott was formerly director of Sheffield Scientific School, chairman of the division of sciences at Yale, and dean of the graduate school.

Formal presentation of the new laboratory will be at 4 p.m. when Joseph N. Gill, commissioner of agriculture, representing Gov. Ribicoff, hands the keys to James G. Horsfall, director of the state.

Paul C. Mangelsdorf, director of the botanical museum, Harvard University, will speak on William L. Slate, who served as director of the station and the Storrs Agricultural Experiment Station for many years.

Departments of the station will show demonstrations and exhibits during an open house event on June 9.

PLANT MODIFIERS WINS NAC NAME CONTEST

WASHINGTON—"Plant Modifiers" has been declared winner in a contest for selection of a name or term to cover a group of products which affect the physiological processes of plants. The contest was sponsored by the National Agricultural Chemicals Assn. through its publication, News and Pesticide Review, and the winners were announced in the May issue.

The winning name was submitted by M. J. Papai, Soil Building Division, Cooperative GLF Exchange, Inc., New York. He received the first prize of $25. Other winners were C. O. Barnard, executive secretary of the Western Agricultural Chemicals Assn., San Jose, Cal., second prize of $10, and C. B. Carman, University of California, Citrus Experiment Station, Riverside, Cal., third prize of $5.

The NAC publication said that the judges made the selections of the winning name "based on the ease by which it could be used in proposed legislation as well as picking a term that would be descriptive in nature so that it would lend itself to common, everyday usage by scientists and layman alike." More than 105 names were submitted.

Gloomicides

The Sunday School class was composed of three and four year olds. The teacher asked, "Do any of you remember who St. Matthew was?" No answer.

"Well, does anyone remember who St. Mark was?" Still no answer.

"Surely someone must remember who Peter was?"

The little faces were full of interest, but the room remained quiet. Finally a small voice broke the silence: "I fink he was a wabbit!"

★

Louis-XVIII was reading a tentative budget to Talleyrand, head of the provisional government. "Your Majesty, I note an omission," commented Talleyrand.

"Well?"

"Payment to the deputies."

"I think they should perform their duties without payment; it should be an honorary position."

"Without any payment?" cried Talleyrand, horrified. "Without any payment? Your Majesty, that would cost us much too much!"

★

Apropos of the growing power of American women in business and politics, I have this story fresh from Brooklyn: A woman went into the office of a cemetery manager and complained, "I can't find my husband's grave. I know he's buried here," "What is the name?" the manager asked. "Thomas Jackson," she replied. Referring to his card index, he said, "Madam, we have no Thomas Jackson. We have an Elizabeth Jackson."

"That's him," she said. "Everything's in my name."

★

An elderly man, applying for admission at General Hospital, looked puzzled at the admissions clerk's question:

"What was your state of birth?" she repeated.

The oldtimer scratched his head and answered, "Nude, I guess."

★

While trying to solve a plumbing problem at his home, my neighbor, a physician, was interrupted by a phone call. Could the doctor come right over to see the man's sick wife? My neighbor explained that the caller had caught him with his pipes down.

"Well, I'm a plumber,"the other fellow said. "You come and fix my wife, and I'll go to your home and fix the plumbing."

The deal was closed. It worked fine until the end of the month. The doctor's bill was $5, and the plumber's $10.

★

After a day of complete harassment, the mother shook her finger at her small, ornery boy. "All right, Junior," she shouted. "Do anything you darn please! Now let me see you disobey that!"

★

Our typist might have to go. She seems to be getting dumber than ever.

When her complexion developed a certain spottiness, accompanied by some swelling and local irritation, we suggested that the condition might be the result of biting insects.

She gave us a withering look, "Of course it isn't!" she snapped. "I wouldn't dream of biting insects!"

★

One advantage of being poor: It doesn't take much to improve your situation.

Three Arkansas Firms Enter Fertilizer Business

LITTLE ROCK, ARK.—The Flat Creek Corp., Weldon, Ark., has filed articles of incorporation with C. G. Hall, Arkansas secretary of state, to engage in the "farm and agricultural development business."

The firm was authorized 10,000 shares of stock valued at $25 per share. It stated it would start business with $300 paid-in capital.

Incorporators were Ralph McDonald and Clyde B. McDonald, both of Newport, Ark., and James O. Duplee, Weldon, Ark. Fred M. Pickens, Newport, was listed as the firm's agent.

The B-K-W Farm Store, Inc., Freeman, Ark., also filed articles of incorporation with the Arkansas secretary of state's office. The firm was authorized 100 shares of no par value stock, and it listed $15,000 in paid-in capital.

Incorporators were Jim V. Benham, Marked Tree; Buford Keller, Jonesboro, and Walter H. Keller of Weiner. Mr. Benham was listed as agent for the corporation.

The third firm, the Earl Nicholson Gin Co. in Blackton, has filed articles of incorporation to engage in the "seed, fertilizer and feed" business.

The firm was authorized 1,000 shares of $100 par value stock. It listed $300 as its paid-in capital.

Incorporators were Earl, Esta Mae and Blanche Nicholson, all of Blackton. Mr. Nicholson was named agent for the company.

Dow Income Report

MIDLAND, MICH. — The Dow Chemical Co. reported net income of $41,768,855, or $1.59 per share of common stock outstanding, for the nine months period ended Feb. 28, 1959. Sales for the period totaled $511,353,127.

During the same period of 1958, net income was $36,906,021, amounting to $1.43 per common share, on sales totaling $482,044,367.

WINS HONORS

SKOKIE, ILL.—International Minerals & Chemical Corp.'s new administrative and research center in Skokie has received two of the nation's top 1959 honors for new buildings. It was the only office building chosen for a top award in the annual competition sponsored by the Chicago Chapter of the American Institute of Architects in cooperation with the Chicago Association of Commerce and Industry; and it was one of two "merit of award" winners in the nation-wide contest sponsored by Office Management magazine for offices housing more than 300 persons.

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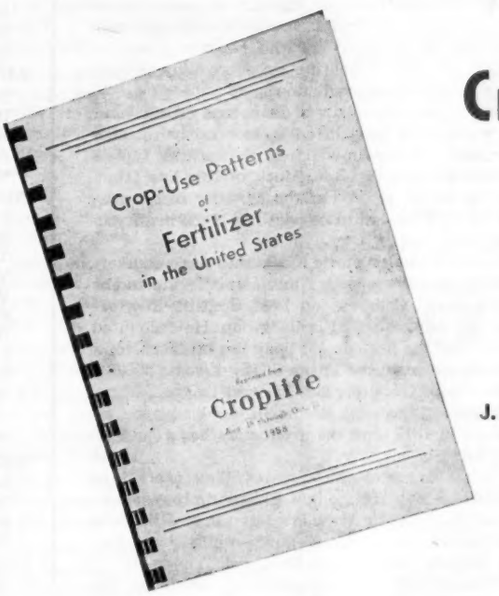

Crop-Use Patterns of Fertilizer in the United States

by

J. R. ADAMS L. B. NELSON D. B. IBACH
U.S. DEPARTMENT OF AGRICULTURE

This significant report was compiled by the U.S. Department of Agriculture after thorough studies of fertilizer use in the United States. Crop-Use Patterns covers questions which, until now, have not been adequately answered. Crop-Use Patterns is based on information gathered from every fifth farm surveyed in the most recent U.S. Census . . . providing a broad base of national information.

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Range Fertilization Points to More Sales

FERTILIZER tradesmen continue to hear rumblings of criticism from laymen outside of agriculture to the effect that fertilizer use is wholly responsible for the surplus situation in many crops. It is difficult to talk such people out of their preconceived notions, and there may be some question as to whether it is worth the trouble to attempt changing their viewpoints.

Perhaps by the time such an argument is settled one way or the other, the effects of the tidal wave of population may be felt and thus make such a discussion unnecessary. Possibly by then, the same folks who currently grumble against the use of so much fertilizer, will be alarmed over the great burden thrust on remaining agricultural lands and will be clamoring for the government to "do something" to increase crop yields.

Actually, the fertilizer industry is well aware of the situation. It is true that production capacity exceeds demands of the present time in some instances, but there is overall justification for much of this. There are many signs pointing to greater consumption of fertilizers not only for the current year, but also in the immediate years ahead.

Pasture lands, for instance, provide a strong potential for business year after year. The pressure of demands for more beef will be felt before long and range operators are aware of this.

Dr. George B. Alcorn, director of the agricultural extension service of the University of California, said recently at a meeting of the California Fertilizer Assn. that these range operators recognize that times are changing. "There is increasing pressure on all agricultural lands in California as our population and industry grow," he said. There are also other factors exerting pressure in the direction of getting more out of existing acres. These include the expansion of suburbs, highways, building of airports and new industrial sites.

"Agriculture is being forced into more intensive use of existing agricultural land and to the development of new areas for cultivated crops," Dr. Alcorn observed. "The one common denominator of all land use today is greater intensity of use. The ranges are and will be used more intensively. I don't mean just more livestock put on the range; I mean more inputs; range management, seed, fertilizer, etc., in the hope and expectation of greater output.

"This greater intensity of use will increase the need for range improvement. As more intensive cropping of non-irrigated lands comes about, we may expect the value of our hill and terrace lands to go up. We will have to learn how to get more out of our ranges to justify their use. Range reseeding, range fertilization and improved grazing management are some of the tools we will be using to increase the carrying capacity of our range."

Confirming the opinions expressed by Dr. Alcorn, but from a little different angle, is a report out of Purdue University. J. Carroll Bottum, agricultural economist at Purdue, said recently that the tremendously-increasing numbers of teenagers in the U.S. between now and 1965 will have considerable impact on the beef raising industry through the youths' appetite for hamburgers.

At first, one is inclined to smile just a little at the prospect of hordes of youngsters eating millions of hamburgers, but here are some figures presented by Mr. Bottum which give the picture more depth.

Not only do teenagers eat about 20% more than does the average adult, but the number of teenagers will increase from 25 million to 34 million, a jump of about 35%, by 1965, he points out. This should have its effect on the range managers who want to get maximum utility out of their land.

But the rise of teeners is not the only hook on which to hang one's hopes for increased use of plant food on ranges. Consumer incomes in general are expected to keep on rising in the years ahead, and this will have its impact also on the demand for more beef relative to other meats. Once more, additional pressure on the range operator to increase productivity.

It has been pointed out before that present agricultural surpluses, though burdensome, are really only some 5% above actual need. The application of fertilizer to various crops is estimated to account for about 25% of total yields. Thus, if no fertilizer were used, there would be a present shortage of food and fiber of around 20%. The 5% overage should be regarded therefore as a safe margin.

Obviously, agricultural production can't be gauged right down to the last mouthful of food.

Pesticides Improve Health

WHILE a vocal minority of people in the U.S. are decrying the use of pesticides as being harmful to human life and welfare, other countries are grateful for the benefits given by control of disease-bearing insects. Why should there be such a contradiction?

The health standards of numerous countries of the world have been lifted tremendously through the control of insects which carry malaria, typhus and many other diseases. Much of this has taken place in recent years, but the need for insect control through the centuries past has made history in a negative sort of way.

Some of these historic milestones were enumerated by Eric Livingston, American delegate to the International Congress on Pest Control, in a recent talk before a California group. He recounted that it was the presence of body lice on Napoleon's soldiers that resulted in the death of some 500,000 of his troops from diseases brought by the insects. This was at the time of his ill-fated advance on Moscow in 1812, and the event may have changed the course of history.

"Body lice and the diseases they carried to Spanish seamen are thought to be largely responsible for the Spanish Armada's loss to the British in that historic sea battle. Yellow fever was the specific disease afflicting the Spaniards," he said.

"The French were unable to complete the Panama Canal because they had no means of controlling mosquitoes. Of all the costs of the canal, 10% was for controlling and killing mosquitoes.

"In historical times, eight emperors died of disease contracted from fleas, as did the great musician Schubert who died of black plague transmitted by a flea.

"The present problem in controlling pests is education, rather than the need for greater advances in techniques. New pests develop and those endemic to other countries are brought into the United States. Within the last several years, the fire ant brought in from Argentina and the earwig and Mediterranean fruit fly from the Mediterranean have inflicted tremendous losses in agriculture and have spread because natural enemies are largely nonexistent," he said.

New Headings This Issue

CROPLIFE readers will note in this issue, adoption of new headings for the various departments of the paper. In keeping with our desire to maintain an attractive business paper for our readers, the editors decided that the "What's New" column; the "Better Selling" section; and features such as "Oscar and Pat," "Meeting Memos," "Industry Patents and Trade Marks," "Over the Counter" and "Farm Service Data" deserved a new set of headings. Those appearing in this week's issue represent the first step of several contemplated ones to make Croplife not only more attractive to the reader, but more newsy and useful to him as well.

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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June 9-10—Annual Convention of the Alabama Seedsmen Assn., Houston Hotel, Dothan, Ala.; Raymond Shreve, Andalusia, Ala., secretary.

June 14-17—North central branch, American Society of Agronomy, Kansas State University, Manhattan, Kansas.

June 15—Northeast Industry Advisory Committee, The Greenbrier, White Sulphur Springs, W. Va.

July 1—Western Research and Education Committee, El Mirador Hotel, Sacramento, Cal.

Sept. 24-25 — Annual North-Eastern Fertilizer Conference, NPFI, Biltmore Hotel, New York, N.Y.

Oct. 27—Seventh Annual Grassland Farming Conference, Extension Service, Rutgers University College of Agriculture, New Brunswick, N.J.

Dec. 7-10—Central Canada and North Central Weed Control Conferences, Royal Alexandra Hotel, Winnipeg, Manitoba, Can.

Meeting Memos listed above are being listed in this department this week for the first time.

May 20-21—Annual "Pest-O-Rama," in Miami, Fla., sponsored by the Dade County Agricultural Agent, Dade County, Fla.

May 21—Chemical safety workshop sponsored by the Manufacturing Chemists' Assn., Palmer House, Chicago.

June 4—Executive committee meeting, fertilizer section, National Safety Council, Hotel Roanoke, Roanoke, Va.

June 9-10—Seventeenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Velda Rose Motel, Hot Springs, Ark.; Maurice Rowe, Virginia Department of Agriculture, 1122 State Office Bldg., Richmond 19, Va.

June 9-11—Pilot plant demonstration on recent developments in fertilizer production technology. Muscle Shoals laboratories, Sheffield, Ala.

June 11-13—87th annual meeting, Manufacturing Chemists' Assn., The Greenbrier, White Sulphur Springs, W.Va., John L. Gillis, vice president of Monsanto Chemical Co., program chairman.

June 14-17—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

June 15-18—Western Society of Soil Science, University of California, Davis, Cal.

June 17-19—Northeast Branch American Society of Agronomy, University of Delaware, Newark, Del.

June 23-25—Pacific Branch, Entomological Society of America, 43rd annual meeting, El Dorado Hotel, Sacramento, Cal. Dr. Leslie M. Smith, University of California, Davis, branch chairman.

June 27—Del-Mar-Va Peninsula Fertilizer Assn., Ocean City, Md.

June 29-30 Fertilizer Industry Conference, University of Illinois, Urbana, Ill.

June 29-30—Seventh Annual California Fertilizer Conference, University of California campus, Davis, Cal. J. H. Nelson and Earl R. Mog, co-chairmen.

July 7-9—Regional Fertilizer Conference, co-sponsored by the Pacific Northwest Plant Food Assn. and state colleges and universities in the area, Winthrop Hotel, Tacoma, Wash.

July 15-17—Southwestern Fertilizer & Grade Meeting, Galvez Hotel, Galveston, Texas.

July 29—Annual Kentucky Fertilizer Conference, Guignol Theater, University of Kentucky campus, Lexington, Ky.

July 31—Agronomy Field Day, University of California, Davis, Cal.

Aug. 3-7—Gordon Research Conference on biochemistry in agriculture, Kimball Union Academy, Meriden, N.H.

Aug. 18-22—Annual Convention of the Canadian Fertilizer Assn., Bigwin Inn, Lake of Bays, Ontario.

Aug. 26-28—Soil Conservation Society of America, 14th Annual Meeting, Rapid City, S.D.

Aug. 30-Sept. 3—American Institute of Biological Sciences annual meeting, Pennsylvania State University, University Park, Pa.

Oct. 13-14—Western Agricultural Chemicals Assn., fall meeting, Villa Motel, San Mateo, Cal., C. O. Barnard, executive secretary.

Oct. 14-16—Pacific Northwest Plant Food Assn. Annual Convention, Chinook Hotel, Yakima, Wash.

Oct. 21-23 — National Agricultural Chemicals Assn., 26th annual meeting, French Lick-Sheraton Hotel, French Lick, Ind., Lea S. Hitchner, executive secretary.

Nov. 4-6—Fertilizer Industry Round Table, Mayflower Hotel, Washington, D.C. Dr. Vincent Sauchelli, National Plant Food Institute, chairman.

Nov. 9-11 — California Fertilizer Assn., 36th annual convention, Fairmont Hotel, San Francisco.

Nov. 16-20 — National Aviation Trades Assn., 20th annual convention, New Orleans, La.

Dec. 9-11—International Crop Protection and Pest Control Exhibition, Seymour Hall, St. Marylebone, London, England.

History of Manitoba Weed Activities Published

WINNIPEG — Weeds received attention at the first session of the Manitoba Legislature in 1871, and to give information on what has been done since that time, a brief history has been published by the Manitoba Department of Agriculture and Immigration. The author is H. E. Wood, formerly chairman of the Manitoba Weeds Commission, and on the staff of the department for more than 40 years.

Mr. Wood tells how the weed problem in Manitoba, with few exceptions, developed from weeds that came into the province, rather than from native weeds. This required an ever changing program of weed control.

The Manitoba Weeds Commission was organized in 1923. A program of control and surveys were initiated in cooperation with the municipalities. These are listed in the publication. The period following 1940 is considered a new era. With the introduction of herbicides, selective chemicals and improved tillage operation combatting weeds received impetus.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $11 per column inch.

All Want Ads cash with order.

MISCELLANEOUS

BRUSH AND WEED KILLER

KILL SUBMERSED water weeds which foul up motor propellers, tangle fishing gear and choke irrigation ditches with R-H Granular Weed Rhap. Inexpensive, easy to use, sure results. For details write Reasor-Hill Corporation, Box 36CL, Jacksonville, Ark.

KILL BRUSH at low cost with amazing R-H Brush Rhap. Will not injure grasses, grains, cattle, or other animals. See your dealer, or write Reasor-Hill Corporation, Box 36CL, Jacksonville, Ark.

HELP WANTED

MECHANICAL ENGINEER

Established Agricultural Chemical Plant on Gulf Coast needs Mechanical Engineer with maintenance background. Age up to 40. Salary open.

Send resume to Ad No. 4804, Croplife, Minneapolis 40, Minn.

Warehouse Supervisor

Warehouse Supervisor for Fertilizer Plant with experience in warehousing where end product is bagged. Located on Gulf Coast. Age up to 50. Salary open. Send resume to Ad No. 4803, Croplife, Minneapolis 40, Minn.

CALENDAR FOR 1959-60

MAY

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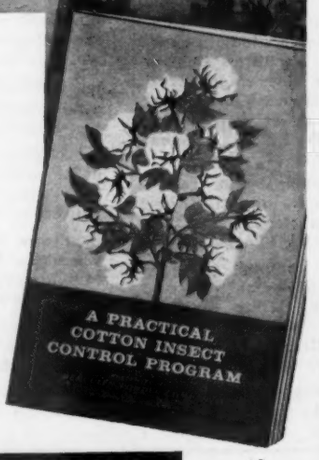
Based on years of research and field experience, charts and booklets are now available for various cotton localities outlining a planned, practical cotton insect control program. This program, using toxaphene and toxaphene-DDT, helps the farmer get the most from his insecticide dollar, increases confidence in insecticides and results in improved sales for dealers. These charts and other materials outlining the program are available for major cotton producing areas directly from Hercules.



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